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# Characteristics of individuals' control in organizations.

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# CHARACTERISTICS OF INDIVIDUALS' CONTROL IN ORGANIZATIONS

A Dissertation Presented

By

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## A C K N O W L E D G E M E N T S

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# ABSTRACT


CHARACTERISTICS OF INDIVIDUALS' CONTROL IN ORGANIZATIONS

(July 1976)

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The importance of control in organizations is well documented. Its distribution and availability within the organization shapes not only individual member attitudes and behavior but affects the eventual success and viability of the organization itself. Yet, research has been vague about the actual determinants and characteristics which underlie what control means to individuals within the organization. The result has been an almost exclusive focus on organizational, as opposed to individual, relationships. The general hypothesis of the study was that there were certain aspects of the individual and of the job environment that accounted for different perceptions of organizational control.

A review of the literature led to the development of a beginning theoretical framework for explaining and describing the characteristics of individuals' control in organizations. It was proposed that individuals' (a) belief

in personal control, (b) positive attitudes about their work environment, (c) positive attitudes about their location in the decision-making network, (d) positive attitudes about their supervisor, (e) clarity about their role requirements, and (f) level in the organizational hierarchy would all vary directly with the degree to which they perceived having control in the organization.

Questionnaire data were collected from 472 individuals occupying three levels in the organizational hierarchy of a nationwide insurance company. The sample was randomly split into two halves and the proposed framework and hypotheses were analyzed with one-half of the sample and subsequently revised, refined, and retested using the remaining half of the sample. Both bivariate and multivariate statistical procedures were utilized in the analysis. The research design allowed for cross-validation of the findings and the multivariate approach offered opportunities to analyze possible interaction effects associated with organizational control.

The results of the study indicated that, except for belief in personal control, all of the dimensions of the model were significantly correlated with organizational control in the predicted direction. An analysis of variance, using a step-wise least squares regression approach, revealed that hierarchical level and attitudes about the work environment were largely responsible for the variance explained by the model. Once level and work environment were taken into account, the dimensions of belief in

personal control, attitudes about supervisor, location in decision-making network, and role clarity contributed little or nothing to relationships with organizational control. These findings were confirmed by a discriminant analysis in which a discriminant function derived from one-half (randomly selected) of the sample correctly classified two-thirds of the individuals from the remainder of the sample. An independent measure of organizational effectiveness was found to be unrelated to organizational control for individuals or for levels.

The implications of this research for the study of control in organizations were discussed. Perceptions of organizational control appear to depend upon the unique personality and experiences of individuals, the structure of the organization, and the level in the hierarchy from which control is viewed. Implications of the failure to find a relationship between control and effectiveness were also examined. Several alternate measures of control were suggested, as well as areas for future research and theory.

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# CHAPTER ONE

## INTRODUCTION

Most people in our society spend a considerable amount of their lives interacting in some way with organizations (*e.g.*, schools, government, churches), if not in fact actually working within an organization. While it would not be an exaggeration to say that we live and die in organizations, most individuals want to believe and feel that they are in command of their own lives. Yet, organizations are designed specifically to regulate, coordinate, and integrate individual behaviors in accordance with organizational purposes. In the broadest sense, in fact, some network of control is superimposed upon all socially organized behavior. Indeed, it has been suggested that organization by nature implies control (Tannenbaum, 1968; Tausky, 1969). Nevertheless, empirical studies have been reasonably consistent in demonstrating that the amount of control and influence individuals feel they have within an organization has significant ramifications both for organizational effectiveness and for healthy employee attitudes. In a time when there is a growing belief that the organizations and institutions, especially the big ones, which serve society have gotten out of control, it is essential to understand the factors which contribute to individuals' control in organizations.

The importance of individual member control has been shown in a number of research studies within a variety of organizational contexts. Smith and Tannenbaum (1963) summarized and compared the results from approximately 200 geographically separate organizational units spanning the range of industrial, voluntary, service, and labor organizations. They concluded that substantial total member control was significantly correlated with high organizational performance and favorable member attitudes in the majority of organizations studied. A number of other studies have documented the positive relationship between job satisfaction and the amount of control individuals exercise in their work situations (Blauner, 1960). In addition, having a say in what goes on in the workplace has been shown to contribute substantially to an individual's sense of involvement, commitment, and feeling of responsibility on the job (Likert, 1961; Morse & Reimer, 1956; Tannenbaum, 1962, 1968). Research findings also indicate that workers and mangers are more likely to feel that they have too little rather than too much authority and control (Porter, 1961, 1962). Psychologists have traditionally maintained that having or experiencing a feeling of control is an essential basis of mental health (Adler, 1959; Fromm, 1947; White, 1959).

What these various findings suggest, as articulated by Likert's (1961) *New Patterns of Management*, seems to contradict much of traditional management theory which argues that the amount of control in organizations is a

nonexpandable and fixed quantity; and, that coordination and organizational effectiveness result from the centralization of the limited resources of control (Gulick & Urwick, 1937; Weber, 1952). As Likert's (1961) research discovered: "The men in the more productive departments see *both themselves* and *their managers* as having more influence then do the men in the low-producing departments. The 'influence pie' is actually seen as being bigger in the higher-producing departments than in the low" (p. 217).

Control in organizations is not a fixed-sum quantity. The classical notion that a high degree of control by the organization's leadership is essential for the efficient administration of the firm is probably valid. Equally valid is the view that a high degree of organizational control by members is necessary in order to promote and insure commitment, loyalty, and individual motivation. Consequently, we take the perspective proposed by Tannenbaum (1961) that substantial amounts of control exercised by both managers and nonmanagers alike will create conditions which result in greater organizational effectiveness and more positive member attitudes. Likert (1959, 1960) described this as a high interaction-influence system.

The importance of organizational control is well documented. Its distribution and availability within the organization shapes not only individual member attitudes and behaviors but affects the eventual success and viability of the organization itself. Although there appears to be

acknowledged consensus on its importance, researchers have tended to be vague about the actual determinants and characteristics which underlie what control means to individuals within the organization. The term itself lacks rigorous definition, and has often been used interchangeably with other words like influence, authority, and power (Posner, 1975). While control has been defined "in the broad sense of the term to refer to any process by which a person (or group of persons or organizations of persons) determines or intentionally affects what another person (or group or organization) will do" (Tannenbaum, 1963, p. 299), it is not at all clear how one can conceptually differentiate or operationalize either the specific processes of control or its meaning across different individuals and situations.

Likewise, while researchers have gone to great lengths to show that control is a property of organizations (Tannenbaum & Bachman, 1964; Tannenbaum & Smith, 1964), there remains no clear explanation for why individual members report the amount of control they do in the first place. This point has generally been ignored and/or set aside by Tannenbaum and others, resulting in an almost exclusive focus on organizational, as opposed to individual, relationships. Our general hypothesis is that there are certain aspects of the individual and of the job environment that account for different perceptions of organizational control. In order to study this question we ask: "What are the characteristics of individual member's control in organizations?"

This question is significant for several reasons. For one, while we know the manifestations and outcomes generally associated with organizational control, little research has been conducted attempting to identify the patterns or antecedents of the phenomenon. This is analogous to knowing the consequences of smoking without understanding the reasons why individuals smoke in the first place. As Tannenbaum admits: "There are undoubtedly conditions that affect the applicability of the principles suggested, but we do not yet know very much about what they are. Furthermore, it is not always possible to tell cause from effect" (Tannenbaum & Cooke, 1974, p. 43).

If the total amount of control in organizations is a crucial organizational dynamic then it is essential that organizational designers and practitioners understand how control can be created, expanded, and constructively managed. Like its synonym, power, it is easy to imagine the problems associated with control "getting out-of-hand" or not having enough control in the system to "get things moving." The control variable may well prove, in addition, to be an important dimension which should be included in contemporary "contingency" theories of management and organization.

The control process is important to understand also because of its potential connotations of manipulation and the restriction of individual freedom. Indeed, research indicates that greater norms and pressures toward

conformity and greater uniformity in behaviors exists in organizations with high, rather than low, total control (Tannenbaum, 1962; Tannenbaum & Bachman, 1966). In fact, increasing total member control does not necessarily decrease the need for compliance which is essential for organizational coordination. The reverse may be more true; that is, while one may have more control, he/she is not necessarily controlled less. As Tannenbaum (1968) points out: "Increases in the control which persons exercise in organizations may sometimes be accompanied by increases in the extent to which these persons are controlled in the organization" (p. 308).

Moreover, an increase in control may not be without other personal "costs." The extent of these costs is borne out by numerous studies indicating higher rates of heart attack, psychosomatic ailment, stress and anxiety among individuals in positions of control and responsibility (Kasl & French, 1962). Similarly, increased feelings of organizational control which may, on the one hand, lead to greater involvement and commitment may also, on the other hand, increase the risks of failure and disappointment.

Certainly, the meaning of organizational control is complex. It is most likely interrelated with both personality and structural variables. Yet, since control seems to be an inevitable characteristic of organizations, it would seem impractical and infeasible to try to change or comprehend reactions to various patterns of control in organizations

without knowing what meaning control has for members in those organizations (cf. Tannenbaum, Kavčič, Rosner, Vianello, & Weiser, 1974).

Toward this objective, the present study attempted to extend the organizational control research by developing a beginning theoretical and empirically based framework or model for explaining and describing the correlates of individuals' control in organizations. Questionnaire data were collected from 472 individuals occupying three levels in the organizational hierarchy of a nationwide insurance company. The sample was randomly split into two halves and the proposed framework and research hypotheses were analyzed with one-half of the sample and subsequently revised, refined, and retested using the remaining half of the sample. Both bivariate and multivariate statistical procedures were utilized in the analysis. The research design not only allowed for cross-validation of the findings but the multivariate approach offered opportunities to analyze possible interaction effects associated with organizational control. The result is a richer control theory in terms of its predictive and explanatory power.

Of course, any conclusions drawn from this study must be tempered with the fact that the data were collected from a non-random sample of employees from only one kind of organization, the measures were derived from self-report items, and the analysis was correlational (not causal) in nature. Indeed, methodological refinements in the measurements are called for, in addition to the retesting of the

model under varying organizational conditions.

The study itself, relevant literature, and results are more fully explained and described in the next four chapters. In Chapter Two the literature is reviewed and the exploratory framework and set of research hypotheses concerning organizational control are developed. Chapter Three describes the field setting in which the research was carried out and the methods used to operationalize the dimensions of the framework. The results, based upon both the original framework and a revised model of individuals' control in organizations, are reported in Chapter Four. Finally, a summary of the findings, their significance, and implications for theory and future research are presented in Chapter Five.

Finally, a discussion of the significance of the findings, and implications for theory and further research are presented in Chapter Five.

# C H A P T E R  T W O

## CONCEPTS AND HYPOTHESES

This chapter is divided into three sections. In the first section the existing research in the area of control in organizations is reviewed. Based upon this review, an exploratory conceptual framework and set of hypotheses about the characteristics of individuals' perceptions of organizational control is proposed in the second section. The final section considers the general issue of the reliability and validity of measures of organizational control. In the following chapter we will consider the operationalization and measurement of the concepts introduced and discussed in this chapter.

## CONTROL IN ORGANIZATIONS: RELEVANT RESEARCH

What does "control in organizations" mean? There is no clear, unified, or unambiguous answer to this query. This is not really so surprising since we are dealing with a complex, dynamic phenomenon which, researchers suggest, involves factors concerned with both personality and structural variables (Tannenbaum & Allport, 1956; Vroom, 1960). For example, control has been identified in the literature as relating to social-psychological variables, individual

skills and attributes, characteristics of the task environment, role requirements, relationships with others, information flow, and access to the organization's decision-making network. However, very little has been done to integrate or bring into focus these many divergent perspectives--which is one of the objectives of this study. In this section we briefly review the efforts of researchers who have studied the organizational control issue.[1]

The original application of "control" in business organizations derives from the French usage of the term meaning "to check" (Tannenbaum, 1968). It is now more commonly used in a broader sense synomously with the notion of influence and power. Intuitively, it would seem that "having control" in an organization refers to some sense of personal impact or efficacy over the "things" that go on around one in the organization. In some ways, this implies viewing one's self as a causal or, at the very least, contributing factor in the ebb and flow of organizational events and activities. Research conducted on the social-psychological concept of "locus of control," for instance, points out that there are consistent differences among individuals in the degree to which they are likely to attribute personal control in the same situations (Lefcourt, 1972; Rotter, 1966).

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[1]A more extensive recent review of the general topic of power in organizations may be found in Posner (1975).

Heider (1958) has considered control within the context of a naive analysis of action. The outcome of an action is seen as a function of the effective forces of the person and of the environment. A connection is formed between an action outcome's success or failure and either personal or environmental forces. The causal attribution of an action is connected with the person, for example, when the person is characterized by ability, knowledge, intelligence, strength, or an attitude of independence and self-confidence.

Rotter (1966), in a variety of laboratory settings, studied this relationship between feelings of personal competence and internal control (personal attribution of causality). Subjects were generally confronted with tasks or situations whose outcome was clearly seen as due to either skill or chance. Under skill conditions, subjects reported a high degree of personal causality and control. Minton (1968) indicates that this belief in personal or internal control might best be conceptualized as an attitude or expectancy which is the product of both situational and dispositional determinants.

From a more sociological perspective Mechanic (1962) has commented on the potential sources of control, especially for lower participants, in complex organizations. He views this control as arising largely through non-formal channels of authority, in contrast to the traditional notion of authority of position. In doing so, he relies

heavily on the notion of dependency (cf. Emerson, 1962; Thibaut and Kelly, 1959): "To the extent that a person is dependent on another, he is potentially subject to the other person's power. Within organizations one makes others dependent upon him by controlling access to information, persons, and instrumentalities" (Mechanic, 1962, p. 353).

Control over "access" develops in a number of interesting ways. For one thing, suggests Mechanic, it is related to a participant's length of time in the organization. Citing Weber's (1952) discussion of the political bureaucracy, he points out that bureaucrats have considerable power over political incumbents because they tend to be more permanent in the organization as compared to public officials who are replaced rather frequently. It seems reasonable that as individuals become familiar with the organization--its rules and procedures, work flow, norms, and so on--they will experience a greater sense of control than will those without this knowledge and information.

Access may also be related to the level of effort and degree of one's involvement in the organization, or what Homan's (1950) referred to as "sentiments." Favorable sentiments about the organization will generally lead in turn to greater interactions and activities in the directions of increasing one's organizational control.

Another important correlate of organizational control which has been proposed is expertise and/or

technical competence (Peabody, 1962). In the broadest sense, individuals who have resources which are important to, or valued by, the organization are in a position to experience control and influence (Oshry, n.d.). As Mechanic (1962) has pointed out: "The expert maintains power because high-ranking persons in the organization are dependent upon him for his skills and access to certain kinds of information" (p. 354). A number of studies have documented the significant correlation between expert power and control (Posner, 1975).

Moreover, with increasing specialization the number of individuals within an organization and the range of their special competence is likely to proliferate. Several researchers have already described situations and organizations where supervisors are clearly dependent upon their subordinates for certain kinds of information and skills (Scheff, 1961; Sykes, 1956).

Similarly, it has been proposed that an organization will be more effective when it has members who are not only competent but who also have the control necessary to perform their tasks effectively. Farris and Butterfield (1972) in a study of Brazilian banks indicated that organizational effectiveness was especially related to the control exerted by each hierarchical level over the specific task-relevant aspects of the decision-making process for which that level was most responsible. Perceptions of organizational control from this perspective may result

from feelings which originate and spread directly from having the necessary control over the demands most relevant and crucial to one's position in the organization.

Having the requisite information and resources to perform one's job and role requirements effectively--the lack of which has been described as role ambiguity--may contribute to feelings of organizational control in another way. Both role theory and traditional organization theory point out that a lack of clarity about one's specified set of tasks, or position responsibilities, and the organization's norms, expectations, and policies, will likely result in a number of dysfunctional consequences.[2] Kahn, Wolfe, Quinn, Snoek, and Rosenthal (1964) in a seminal study indicated that role ambiguity should increase the probability that individuals will be dissatisfied with their role, will experience stress and anxiety, will distort reality, and will thus perform less effectively. A number of more recent studies continue to confirm these findings (Hamner & Tosi, 1973; House & Rizzo, 1972; Ivancevich & Donnelly, 1974; Miles, 1976; Miles & Petty, 1975). Consequently, not having the necessary information about the requirements and demands of one's role or feeling that organizational policies and performance objectives are incomprehensible and inequitable should accompany unfavorable perceptions of organizational control.

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[2]For an interesting experimental study of this see Smith (1957).

Furthermore, there are several studies which have demonstrated a positive relationship between favorable member attitudes and organizational control (Ivancevich, 1970; Morse & Reimer, 1956; Morse, Reimer & Tannenbaum, 1951; Tannenbaum, 1962). For instance, an experimental change in procedures, designed to increase control by rank-and-file workers, was instituted in a clerical department of a large insurance agency. The overall effect was a significant increase in workers' general satisfaction with the company and with supervisory personnel (Morse & Reimer, 1956). As Bachman and Tannenbaum (1966) have concluded: "Individuals tend to be more satisfied with those aspects of life or of their jobs over which they have some control than those over which they have none" (p. 24).

There are diverse mechanisms through which control may be exercised. In their study of local labor unions, Tannenbaum and Kahn (1957, 1958) observed that participation in formal decisions at union meetings, while important, was only one part of the feelings or manifestations of control by union members. Control was exercised through informal interactions, through representatives, and in other ways. In interviews with the researchers, union members expressed their belief that they exercised real control as a result of what was said at informal discussions. Many felt that they had control because they had clear access to others active in the union who could be expected

to reflect and champion their own viewpoints. These more "active" others included both official representatives (*e.g.*, stewards) and more unofficial representatives, as occurs among groups of friends. Furthermore, members felt they exercised control simply from their potential for collective action; *e.g.*, the power to strike. Again citing Homans (1950), favorable interactions with influential others will generally lead to more favorable sentiments about one's own organizational control and influence. Each of these above "explanations," it should be noted, refer not so much to active participation as they do to feelings of organizational control which eminate from a sense of access to the organization's formal power and decision-making network.

Pelz (1952) has shown from another perspective the saliency of access to the power network for organizational control. His research indicated that subordinates who viewed their immediate superiors as influential with higher management attributed more power to them and went along with a greater number of influence attempts than did those subordinates who viewed their supervisor as uninfluential. Similarly, research studies indicate that organizational control is likely to be high when individuals cooperate with their supervisors because of "confidence in his or her technical expertise or because they see the manager as a psychologically attractive person (Tannenbaum & Cooke, 1974, p. 40). Studies of the "bases

of power" point out that total control is generally high for managers whose leadership is perceived as depending largely upon their skill and expertise (expert power) and upon their personal attractiveness (referent power)(Bachman, Bowers, & Marcus, 1968; Bachman, Smith, & Slesinger, 1966). Consequently, the influence and competence of one's supervisor would seem to directly affect one's own perceived capability to exercise, especially through channels, some degree of control within the organization.

In a similar vein, the structure of the communication process and flow of information in an organization is relevant in determining both one's "access" to persons, information, and instrumentalities and one's potential ability to influence (have impact on or control over) what goes on in the organization. Studies of communications structures and patterns clearly indicate that one's location within a communications network affects one's opportunities for interaction and impact upon the group's tasks (Bavelas, 1968; Guetzkow & Simon, 1955; Leavitt, 1951). Satisfaction, both with the group and with its task, is low for individuals in peripheral communications locations. It does not seem unreasonable to hypothesize that the same may be true regarding feelings of organizational control for individuals in similar locations.

Much has been written also about the control-enhancing character of "participative management" systems (Haire, 1962; Likert, 1961; March & Simon, 1958). While

causal relationships are muddled, it is clearly argued that total member control is enhanced the more supervisors interact, communicate, welcome and solicit opinions, and, in general, elicit influence attempts by subordinates (Tannenbaum, 1968). As a result there is a more substantial interaction-influence system, and a greater total amount of control in the organization by all members. "Organic" (Burns & Stalker, 1961) and "human resources" (Miles, 1965) models of organization imply a more highly active and involved workforce. These models suggest, and research findings point out, that a system of high mutual interaction and substantial total member control accompanies increased feelings of member consensus, degree of identification (loyalty), and commitment to the organization (Smith & Ari, 1964; Tannenbaum & Smith, 1964).

Bell (1965) has commented on the relationship between closeness of supervision and the degree of predictability in the work demands of subordinate's jobs. His analysis indicates that the more unpredictable the work environment, the less there will be close supervision. In a latter report it was shown that individuals who estimated they had the most predictable and routine work demands tended to estimate that they exercised the least discretion over the demands of their jobs (Bell, 1966). Feelings of control would seemingly be enhanced when individuals are not under the close supervision and surveillance of their supervisors. High self-determination by the worker has been described as the meaning

attached to control by rank-and-file workers (Smith & Ari, 1964).

Finally, it has been pointed out by a number of organizational theorists that control is (or is meant to be) hierarchically distributed within the organization (Litterer, 1973; Tausky, 1969). The creation of a hierarchy of positions generally implies that an increasing amount of organizational control is available as one goes up in the organization's bureaucracy. In addition, this control or power is attached to the position and is available to the occupant of the position, regardless of his/her personal qualities. What this position suggests most directly is that one's level or position in the organizational hierarchy should make a significant difference in terms of one's amount of organizational control. Peabody's (1964) study of superior-subordinate relationships in three public service organizations clearly revealed that level was a crucial determinant of perceptions of organizational control. This is indeed the classical management position: control increases at higher and higher levels in the organizational hierarchy.

To summarize, the concept of control in organizations has been approached, considered, and wrestled with in a variety of different ways. The literature on the subject covers research conducted in all of the social science disciplines. Yet, in no way can it be described as a very organized or coherent literature (Cartwright, 1965). It seems essential therefore, that some effort be made towards

developing a conceptual framework which would account for and integrate the myriad perspectives on organizational control. This is the goal of the next section.

## DIMENSIONS OF ORGANIZATIONAL CONTROL: A PROPOSED FRAMEWORK

We began this inquiry by asking what "things" constituted or contributed towards individuals' control in an organization. Based upon the preceding literature review we are now in a position to suggest, in the form of hypotheses, what may be some of the more important dimensions of organizational control. In addition, we further postulate that the several dimensions may be linked together in some systematic fashion. Figure 2.1 illustrates the proposed conceptual framework. Each dimension, and the various forms it may take, are discussed briefly below.

Belief in Personal Control.--This dimension refers to dispositions and attitudes characterizing feelings or beliefs that events and actions are contingent upon factors attributable to individuals and under their personal control and influence (Lefcourt, 1966, 1972; Rotter, 1966). It is also characterized by an independence from the activities and assistance of others and a preference for working along or by one's self.

> HYPOTHESIS I: The greater an individual's belief in personal control, the more organizational control he[3] will perceive having in the organization.

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[3]To avoid cumbersome language, masculine pronouns are used in the hypotheses. The hypotheses are meant to be applicable to individuals regardless of gender.

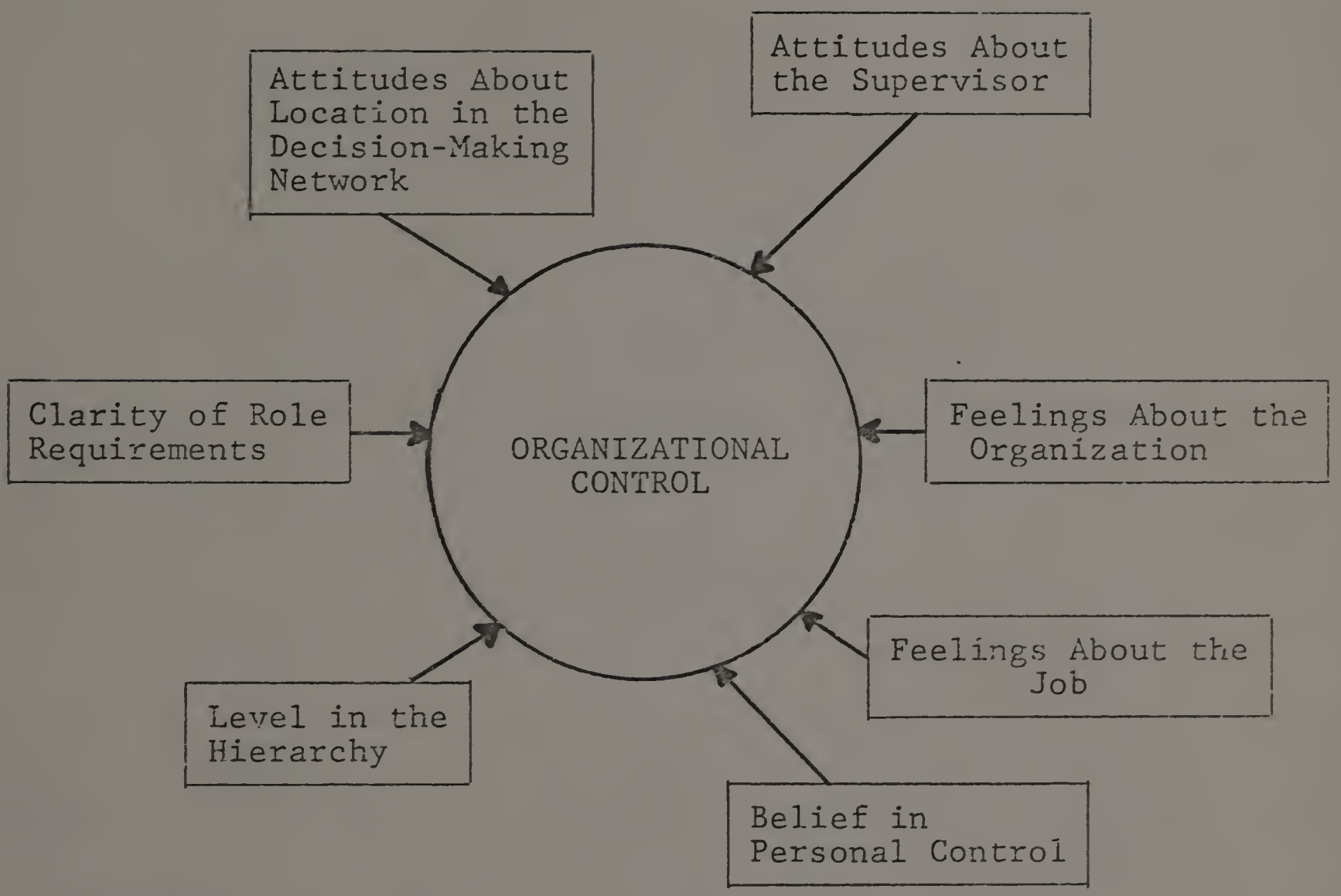


Figure 2.1. Characteristics of individuals' control in organizations.

Feelings About the Job.--There are several related aspects to this dimension. First of all, it refers to the relationship between the set of resources and skills which one possesses, or brings to the workplace, and the way in which the organization both utilizes and values these attributes. The manner in which one's resources are utilized has been seen as a key factor underlying motivation and job satisfaction (Argyris, 1957). An unmotivated and dissatisfied worker is seldom concerned with organizational control, unless, of course, there is a desire to sabotage or damage the organization. Job enrichment and System IV proponents have suggested, at least implicitly, that individuals whose jobs are satisfying and motivating will have a greater sense of control in the organization (Herzberg, 1974; Likert, 1967).

Secondly, when the organization highly values an individual's skills, in the sense of expertise, then that individual should experience a greater amount of organizational control (Mechanic, 1962). Finally, when there is an appropriate task-relevant distribution of control individuals will have more favorable attitudes in regards to possessing control in the organization overall (Farris & Butterfield, 1972).

> HYPOTHESIS II: The more positive an individual's feelings about his job are, the more organizational control he will perceive having in the organization.

Feelings About the Organization.--This dimension is similar to feelings about the job. It encompasses positive member attitudes about the organization in general, attitudes which Tannenbaum and his associates (1968) have indicated are associated with organizational control. Participative management systems, furthermore, are postulated upon the notion that loyalty, involvement, and commitment to the organization are outgrowths of one's feelings about having some say and influence in the organization.

> HYPOTHESIS III: The more positive an individual's feelings about his organization are, the more organizational control he will perceive having in the organization.

Attitudes About the Supervisor.--The most immediate and direct effects of the control process in an organization are usually manifest in relations and interactions with one's supervisor. After all, this person not only has a great deal of formal authority but may also be in control of many of the resources necessary for success in one's job. This includes the supervisor's own capability in fulfilling the requirements and demands of superiors. Moreover, the typical situation of working through the "chain of command" implies that one's own control is mitigated by the control and influence of those higher in the organization. Consequently, feelings about a supervisor's technical and decision-making skills would seem important in order to experience a corresponding sense of organizational control on the subordinate's

own part. Likewise, as Pelz (1952) reveals, if subordinates are to feel that they have control they must in turn perceive that their supervisor is effective and has influence or clout with those at higher levels in the organization.

> HYPOTHESIS IV: The more positive an individual's attitude about his supervisor, the more organizational control he will perceive having in the organization.

Attitudes About Location in the Decision-Making Network.--This dimension encompasses Mechanic's (1962) proposition that organizational control is associated with feelings of access or connection to the organization's decision-making network. Of course, this may occur in a variety of ways, as attested to in the study of union members (Tannenbaum & Kahn, 1958). At a minimum, however, it seems to require a sense of support from one's supervisor in dealings with higher levels of management. In addition, a feeling of having access is contingent upon the range and openness of the communications flow in the organization. Location in the communications network allows some individuals greater opportunities than others to voice their opinions and exert influence on what goes on in the organization. It has also been postulated that both experience and involvement in the organization will provide increased access to information, persons, and instrumentalities; hence, organizational control.

> HYPOTHESIS V: The more positive an individual's feelings about his location in the decision-making network, the more organizational control he will perceive having in the organization.

Clarity of Role Requirements.--This dimension refers to two seemingly contradictory ideas stemming from role theory (Katz & Kahn, 1966). The traditional viewpoint is that organizational roles should be clearly specified and fairly rigid. This is necessary in order to ensure uniformity in behavior among individuals in similar roles. Indeed, the studies of Kahn, *et al*. (1964) point out the dysfunctional aspects of role conflict and ambiguity. Consequently, the clearer the role messages and expectations, the less ambiguity a role incumbent should encounter. Knowing what is expected of oneself and the like should facilitate confidence in role performance. This, in turn, should enhance feelings of organizational control.

There is a trend in some circles, however, proposing a more dynamic view of organizational roles (Bennis & Slater, 1968). In fact, organic models of organization seem to require a great deal of role flexibility and potentially greater ambiguity and conflict about role requirements. Bell (1965, 1966) has pointed out that role flexibility is likely to be synonomous with discretion on the job, as evidenced by the closeness of supervisory surveillance (which, of course, may vary by level in the organization). The latter is therefore likely to affect one's opportunities to experience and/or exercise organizational control.

> HYPOTHESIS VI: The greater an individual's clarity about his role requirements, the more organizational control he will perceive having in the organization.

Level in the Organizational Hierarchy.--The relevance of this dimension seems obvious due to the way organizational hierarchy is usually defined. The very phrase "higher management" implies an unequal distribution of organizational control; that is, those "higher up" have greater control over the organization (Scott, 1970). Consequently, perceptions of organizational control should be associated with one's position or level in the hierarchy of the organization (Tannenbaum & Georgopoulous, 1957).

> HYPOTHESIS VII: The higher an individual's level in the organizational hierarchy, the more organizational control he will perceive having in the organization.

An overall framework (or model) and set of hypotheses about the important dimensions of the organizational control have now been developed. This was done with the idea of integrating the perspectives offered by the literature reviewed in the previous section. Several observations about this framework should be noted. It is admittedly incomplete, perhaps crude in parts, and the dimensions may not be completely independent of one another. However, these deficiencies speak as much to the state of the field and existing literature as they do to the framework.

Also, this proposed framework focuses (although not exclusively) on the question "How does the social situation seem to the participant?" rather than "What are the objective facts about the situation?" On this point, however, researchers have admirably demonstrated that individual members'

responses may, and indeed do, reflect the effects of the actual situation; that is, the structural characteristics of the organization (Blau, 1957; Davis, Spaeth, & Huson, 1961; Tannenbaum & Bachman, 1964; Tannenbaum & Smith, 1964). In only the strictest sense, then, does the proposed framework represent simply a psychological (perceptual) statement regarding control in organizations.

In Chapter Three the analytical and statistical procedures which were used to operationalize the concepts and test both the separate dimensions and the proposed framework overall are discussed. Before doing so, however, we consider the issue of how control in organizations is measured.

## THE MEASUREMENT OF CONTROL IN ORGANIZATIONS

One of the major difficulties in studying organizational control has been that of how to adequately measure it. In general, researchers have obtained data about organizational control, as Tannenbaum (1968) observes: "Either from available records describing the legal or structural characteristics of organizations or from informants who respond to questions concerning how or where in the organization decisions are made or how influence is exercised" (p. 23).

Evan (1963) reviewed a number of different indices which have been used to measure control in organizations. These included span of control, number of levels of authority,

level in hierarchy where given classes of decisions are made, ratio of administrative to production personnel, time-span of discretion,[4] and the formal limitations that apply to management's decision-making authority (*e.g.*, grievance procedures). Some of these measures have been used because the data were readily available. Others have been chosen to fit particular conceptual formulations. None of them, however, has proven to be superior to the others, nor have any of them been substantially validated.

The bulk of the empirical research on the concept of control in organizations has come from researchers connected with the Institute for Scoial Research at the University of Michigan (*e.g.*, David Bowers, Jerald Bachman, Basil Georgopolous, Daniel Katz, Robert Kahn, Rensis Likert, Floyd Mann, Paul Marcus, Nancy Morse, Martin Patchen, Daniel Pelz, Stanley Seashore, Clagett Smith, and Arnold Tannenbaum). Their combined efforts, which have spanned a wide variety and range of organizations over the past 25 years, rely upon a methodological technique known as the "control graph" (Tannenbaum, 1956; Tannenbaum & Georgopolous, 1957; Tannenbaum & Kahn, 1957).

Basically they measure control by asking participants questionnaire items concerning the amount of influence or control exercised by themselves and by various other groups in their organization. This technique, which was

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[4]This is defined by Jaques (1956) as "the maximum length of time an employee is authorized to make decisions on his own initiative which commit a given amount of the resources of the organization" (p. 23).

used in this study, assumes that organizational members as a group are able to provide reasonably valid and reliable data about the distribution, consequences, and patterns of organizational control. A substantial number of studies have been conducted which lend support to this assumption and to the power of the control graph technique.[5]

Williams, Hoffman, and Mann's (1959) study, for example, compared the control graphs of the top and bottom echelon groups within one organization in order to determine whether there was a systematic perceptual bias associated with one's position or level in the hierarchy. Their analysis indicated that there was no systematic bias associated with one's level in the organization; *i.e.*, the organization's control structure will be described similarly by individuals at different levels in the organization. Further examination revealed that control graphs could also reliably distinguish between two different subcultures within the same organization.

Whether the control graph measures reflect accurate appraisals of the objective situation in each organizational unit was considered in a major study of voluntary organizations (Tannenbaum, 1961). "Ideal" control graphs were generated by respondents as a measure of possible halo or response-sets in effective as compared to ineffective local units. There were no significant correlations between

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[5]Of course, the methodology is not without its critics (cf. McMahon & Perritt, 1971; Patchen, 1963).

effectiveness and total amount of control for these ideal control graphs, although there were for the "actual" control graphs--further evidence of the control graph's validity.

Whisler, Meyer, Baum, and Sorensen (1967) provided additional clarification as to what respondents intend when they assign an influence valence to a group or level on the control graph measure. They pointed out that logically this number could "represent the combined influence of all those in the group or the influence of an average member of the group" (Whisler, *et al.*, 1967, p. 18). By means of subsequent follow-up interviews with respondents and additional calculations, they demonstrated that the questionnaire ratings represented ratings of the perceived influence of the *average* member at a given level.

The reliability of the control graph technique has been further substantiated by comparing results obtained from outside evaluators, intensive interviewing, and participant observation (Likert, 1961; Tannenbaum & Kahn, 1957; Williams, *et al.*, 1959). Findings from cross-cultural studies also lend credibility to the accuracy of perceptual control graph ratings (Farris & Butterfield, 1972; Kavčič, Rus, & Tannenbaum, 1971). As Daniel Katz pointed out: "[Tannenbaum] worked in countries[6] and settings in which organizational control is known to have different degrees of centralization and distribution. . . .

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[6]Austria, Israel, Italy, Yugoslavia, and the United States.

The measures of control based upon individual perceptions were clearly supported in these cross-cultural comparisons" (Tannenbaum, *et al.*, 1974, p. xv).

All in all, research utilizing the control graph method has generally shown meaningful differences in many types of organizations and in different countries and cultures. There appears to be adequate support for the validity and reliability of the methodology.

In sum, the consistent and significant relationships which have been found between organizational control and independent indices of organizational effectiveness and positive member attitudes suggest that this variable is of utmost importance for those concerned with organizational behavior and theory. Still, while one can be confident that the control graph is saying something about control in the organization, it is not obvious, as we suggested earlier, what this "something" is that is captured when individuals respond to global questions about the amount of control they possess in an organization. Clearly, one can expect that control will have different meanings across individuals and possibly across levels in the organization. Yet, explanations for just why individuals perceive the amount of organizational control they do in the first place are missing. The proposed conceptual framework and accompanying hypotheses are a beginning attempt to systematically identify, explicate, and integrate some possible dimensions or characteristics underlying, for individuals, the meaning of control in organizations.

# C H A P T E R  T H R E E

## RESEARCH METHODOLOGY

This chapter is divided into four sections. The first section describes the characteristics of the research sample. The second section describes the methods which were utilized to operationalize the conceptual dimensions and the resultant scale measures. The next section reports on the reliability of the scale measures. The final section is a description of the statistical procedure for hypothesis testing.

### DESCRIPTION OF THE SAMPLE

The present investigation is a portion of a larger study conducted in a leading insurance company. The larger study was broadly concerned with studying the role of the hierarchy in organizational effectiveness. Besides the topic of control, questions were asked about such issues as leadership styles, decision-making practices, communications, performance appraisals, and the attitudinal characteristics of decision-makers.

Twenty branch offices of the company were selected for examination in such a manner that ten represented the

top-performing offices and the other ten represented low-performers, as judged by top company officials. Lengthy questionnaires were administered on site by the principal investigators. Anonymity was assured and administration time took between one and a half and two hours.

A total of 526 individuals responded to the questionnaire, which represents approximately ninety percent of the underwriting population in these branch offices. The breakdown of the sample by level in the organizational hierarchy was 293 underwriters, 105 supervising underwriters, 74 underwriting managers, 18 branch office managers, and 36 others. This study was concerned most directly with underwriters, supervising underwriters, and underwriting managers and was restricted to these groups. Branch managers were excluded because of their relatively small sample size.

In addition, given the availability of a relatively large data base and considering the exploratory nature of any model-building effort, the author decided to divide the total sample into two independent samples. This decision enabled the statistical and theoretical analysis to proceed in several successive stages and allowed the model-building process to proceed substantially further than would otherwise have been possible.

The total sample was stratified both by branch and by level, and then a random number generating procedure was employed to establish the two samples, A and B. The various measures (to be described below) were developed and

the original hypotheses and proposed model were first tested using Sample A. Based upon these results, the measures and model were revised and analyzed using Sample B. The breakdown by organizational level of the two samples is illustrated in Table 3.1.

It should be noted that even though the subsamples were developed randomly, the total sample is not a random sample of underwriters, or of underwriting supervisory personnel, in general. Nor is it even a random sample of either of these two groups within this particular organization. Consequently, our conclusions strictly speaking will have to be restricted to the twenty branch offices that were studied.

## DESCRIPTION OF THE MEASURES

The various measures or scales which were used to operationalize the conceptual dimensions and test the hypotheses are described below.

Dependent Variable.--The dependent variable of organizational control was measured using a portion of the control graph technique described in the previous chapter. The precise question was similar to that originally used by Tannenbaum and his associates (Bowers, 1964; Tannenbaum, 1956a, 1968; Tannenbaum & Kahn, 1957):

> "All in all how much say or influence *do* you yourself have on what goes on in your Regional Office?"

Table 3.1

Sample Size and Organizational Level

| Level | Sample A N | Sample B N | Total Sample N |
|---|---|---|---|
| Underwriters | 148 | 145 | 293 |
| Supervising Underwriters | 52 | 53 | 105 |
| Underwriting Managers | 36 | 38 | 74 |
| TOTAL | 236 | 236 | 472 |

Respondents answered by checking the most applicable alternative on a five-point Likert-scale, ranging from 1, representing little or no influence, to 5, representing very great influence. A number of studies have been performed indicating the reliability and validity of this technique for measuring total control in an organization (Tannenbaum, 1961; Tannembaum & Kahn, 1957; Tannenbaum, *et al.*, 1974; Whisler, *et al.*, 1967; Williams, *et al.*, 1959). Our use of this question differs somewhat from these earlier studies, however, in that we employ it to measure the individual's amount of control rather than summing all individual responses and dividing by n to arrive at a measure of total control or total group (sum of all individuals at a given level in the organization) control (Tannenbaum, 1956).

It seems reasonable to contend that the evidence which supports this overall measure would also substantiate the portion of it utilized in this study. Should this assumption be challenged, then, as Nunnally (1967) argues: "Sufficient evidence for construct validity is that the supposed measures of the construct. . .*behave as expected*" (p. 92). We would *expect* responses to the question above to vary according to one's level in the organization. Table 3.2 presents the results of an analysis of variance of the total sample indicating that organizational control does indeed vary by level in the organization. Furthermore, all possible pairs of group means were compared, using Duncan's

Table 3.2

Organizational Control: Analysis of Variance by Level in the Hierarchy

| Source of Variation | df | SS | MS | F |
|---|---|---|---|---|
| Between Groups | 2 | 119.79 | 59.90 | 52.70*** |
| Within Groups | 461 | 523.92 | 1.14 | |

***$p<.001$

| Level | N | M | SD |
|---|---|---|---|
| (1) Underwriters | 288 | 2.05 | 1.12 |
| (2) Supervising Underwriters | 104 | 2.55 | .99 |
| (3) Underwriting Managers | 74 | 3.47 | .92 |

diff (1,2) $p<.01$

diff (1,3) $p<.01$

diff (2,3) $p<.01$

Multiple Range Test (Nie, Hull, Jenkins, Steinbrenner, & Bent, 1975), and found to be significantly different from one another ($p<.01$).

In addition, a comparison of the individual levels' control curves, in Figure 3.1, reveals a substantial amount of agreement as to the amount of control exercised by the different levels in the organization. In fact, there were no significant differences in the amount of control at each level as perceived by other levels in the organizational hierarchy (See Appendix III, Table A).

Independent Variables. The original questionnaire was not specifically designed to yield unique measures of the various independent variables. The author, guided by theoretical considerations, therefore, selected 97 items from the questionnaire as possible candidates for inclusion into scale measures of the independent variables. In some ways this procedure might be thought of as beginning the process of scale construction with a general set of hypotheses about which items would group or "go together" well. Copies of the original and final questionnaire items included in these scale measures may be found in Appendix I.

Factor analysis was selected as the appropriate mathematical technique for examining the underlying structure of this large pool of questionnaire items. This technique has been shown useful not only as a possible data-reduction device but also valuable in the explication of constructs (Cooley and Lohnes, 1971; Fredericks, 1975b; Nunnally, 1967).

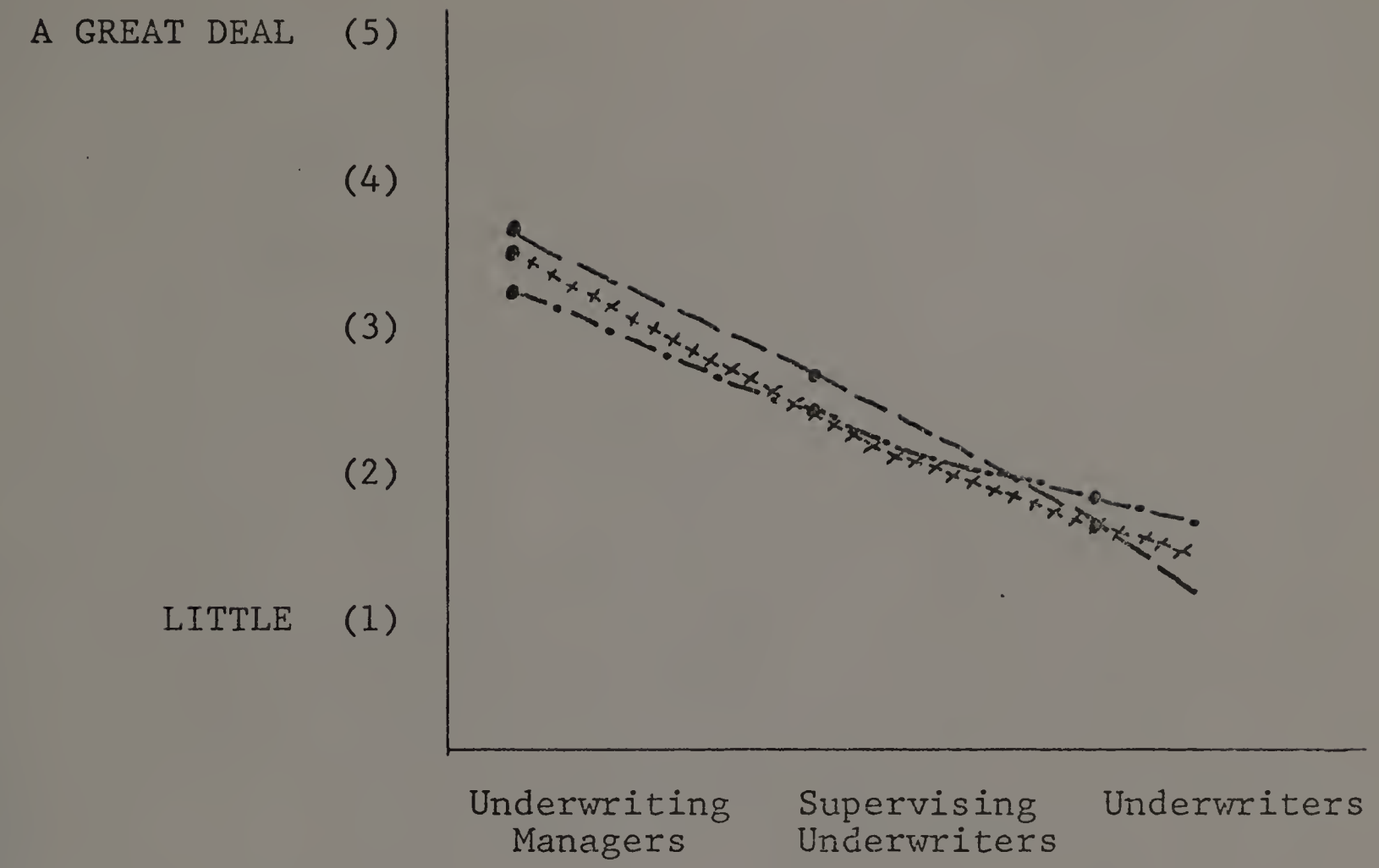


Figure 3.1 Control graph for each hierarchical level in the organization

All factor analyses were performed using principal components as the first stage with varimax rotation after Kaiser normalization (Kaiser, 1958; Nie, *et al.*, 1975).

To begin with a factor analysis was performed for each of the six proposed measures separately. This effectively reduced the item sample by one-third. The remaining items (N = 61) were then again factor analyzed, but this time as a single group. This was done in order to potentially identify any further underlying patterns and possibly validate the original groupings.

Proposed items for the separate scales did, at this stage, hold together more with items from within than between the various scales. A simple structure in the factor matrix (Thurstone, 1947) was approached--substantiating to a considerable extent the author's original clusterings. The one exception to this was "attitudes about the organization." These questionnaire items so overlapped with those in the "attitudes about the job" scale that the two were subsequently combined into a new measure of "attitudes about the work environment."

In addition, items which grouped into non-significant factors (eigenvalues less than .80[1]) and/or had mid-range

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[1]There is no clear agreement or consensus on stopping rules or what constitutes a non-significant factor. Tatsuoka (1971) says that: "This is a big question, indeed, for which there is no general consensus on how to go about answering, let alone what constitutes the 'correct answer'" (p. 146). The choice of "eigenvalues less than .80" as a stopping rule is conservative. Cooley and Lohnes (1971) have asserted that: "It is better to take too many rather than too few factors into rotation" (p. 150). As most factor analyists would

communalities[2] (between .20 and .45) were excluded from further scale construction. Several items with low communalities (less than .10) which could not reliably be included in any specified scale as a possible "specific factor" (Cooley and Lohnes, 1971; Nunnally, 1967) were also excluded. However, prior to dropping any items an oblique rotation factor analysis (Nie, *et al.*, 1975) was performed. A better factor structure was not achieved and the results of the oblique rotation essentially complemented the established groupings. Sixteen questionnaire items were subsequently dropped from further consideration.

Finally, the separate scales were again factor analyzed. This last step resulted in the identification of a number of common and specific factors for each scale. Seven items were dropped from two of the scales because they neither accounted for a significant amount of the variance nor could they be classified as making any unique contribution. Table 3.3 reports a summary of the item reduction effects of scale construction.

To recapitulate, using results obtained from the factor analysis procedures, questionnaire items were grouped

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agree the choice of a cutoff point typically requires a judicious consideration of a number of matters including statistical significance, psychometric reliability and meaningfulness.

[2]Communality of a variable is defined as "the proportion of its variance that is accounted for by the common factors" (Tatsucka, 1971, p. 145).

into five scales. The criteria for grouping items into a scale were twofold: (a) the items should all load heavily on the same factor (only those items loading greater than or equal to .40 were considered) and (b) the items should all reflect a common connotation. Groupings on this basis permitted the development of interpretable scales which had content validity, theoretical relevance, parsimony, and were likely to have high internal consistency (reliability). The factors included in each scale, along with their rotated factor loadings or factor pattern coefficients (*i.e.*, the correlation between each original variable and each derived factor) and communalities (where appropriate), can be found in Appendix II.

It was decided to apply equal weights to the items included in the various scales. For one thing, there is "overwhelming evidence that the use of differential weights seldom makes a difference" (Nunnally, 1967, p. 278). Moreover, Wainer (1976) has shown that in most cases equal weights are not only more robust than differential weights but result in almost "no loss in accuracy on the original data sample" (p. 213).[3]

It should be noted that all the items used in constructing the various measures represented questions from Likert-type scales. Respondents answered by checking the

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[3] This premise was subsequently tested, and supported, in comparisons of the results obtained from the bivariate and miltivariate analyses using equal and differential weighted scales. Factor score coefficients were used as the item weights. This is reported in Appendix III, Tables B-D.

most applicable alternative on a 5-point scale. While there is little question that these are at least ordinal measurements, the generally accepted view is that it is reasonable to assume that such data represent interval measurements and that inferential statistical techniques which require interval characteristics can safely be performed with the data. As Nunnally (1967) notes:

> How seriously are such misassumptions about scale properties likely to influence the reported results of scientific experiments? In psychology at the present time, the answer in most cases is 'very little'. . . .
>
> Consequently, a strong arguement can be made that the analysis of results would be very much the same whether the 'real' scales had been employed or only approximate ones had been used. Then even if one accepted the fundamentalist point of view about measurement scales, what sense would it make to sacrifice powerful methods of analysis just because there is no way of proving the claimed scale properties of the measures? (pp. 24-5).

The separate scales are described more fully below.

Belief in Personal Control.--The scale measure which operationalized this concept was derived from three common factors. Factor 1 measured confidence in decision-making and personal judgment; Factor 2, preferences for working alone; and Factor 3, independence from others. The intercorrelations among these factors are shown in Table 3.4. All of the correlations reported are Pearson product-moment correlation coefficients (one-tailed *t*-tests of significance).

Table 3.4

Intercorrelations Among Factors in the Belief in Personal Control Scale (N = 236)

| | FACTOR 2 | FACTOR 3 |
|---|---|---|
| FACTOR 1 | .18** | .23*** |
| FACTOR 2 | | .37*** |

**p<.01

***p<.001

Attitudes About the Work Environment.--This scale was derived from items originally conceived as involving feelings about the job and feelings about the organization. These two dimensions were subsequently combined and relabeled. The scale consists of two common and two specific factors.[4] One common factor measured satisfaction with both one's work and the organization overall. The second measured the degree to which respondents perceived their jobs as having motivating characteristics. Of the two specific factors, one dealt with feelings of personal expertise in decision making and the other measured the amount of task-relevant control individuals perceived they possessed. These factors and their intercorrelations are shown in Table 3.5. It is not surprising that the specific factors do not correlate significantly with the other factors since they were originally chosen precisely for this reason. As Nunnally (1967) notes: "By definition specific factors are uncorrelated with one another. . . . and are uncorrelated with common factors" (p. 304).

Attitudes About the Supervisor.--This scale was comprised of two common factors which described (a) the technical and/or decision-making skills of the supervisor, and (b) the supervisor's leadership ability and effectiveness. The intercorrelation between the two factors in this

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[4]A specific factor is a single questionnaire item which does not have high loadings on the rotated factors and has a very low communality. It accounts for variance which is not explained by the common factors (Nunnally, 1967). Consequently, specific factors, when theoretically relevant to the construct under consideration, were included in the scale as making a possible unique contribution.

Table 3.5

Intercorrelations Among Factors in the Attitudes About the Work Environment Scale (N = 236)

| | FACTOR 2 | FACTOR 3[a] | FACTOR 4[a] |
|---|---|---|---|
| FACTOR 1 | .57*** | .15** | .09 |
| FACTOR 2 | | .11* | .16** |
| FACTOR 3[a] | | | .11* |

[a]Specific Factor

*p<.05

**p<.01

***p<.001

scale was .55, which was significant at the .001 level (and is not tabled).

Attitudes About Location in the Decision-Making Network.--This scale was derived from three common factors. Factor 1 measured the importance attached to having the supervisor's support for one's recommendations to higher management; Factor 2, the verticality of the organization's communications process; and Factor 3, one's commitment and length of service to the organization. These factors and their intercorrelations are shown in Table 3.6.

Clarity of Role Requirements.--This scale was derived from two common factors which dealt with (a) the clarity, fairness, and consistency of company policies and decisions, and (b) the presence of well-defined work and performance objectives. In addition, there was one specific factor which measured the amount of flexibility individuals had in performing their work. These factors and their intercorrelations are shown in Table 3.7.

Level in the Organizational Hierarchy.--This measure was not part of the previous scale construction process. Rather, the question was straightforwardly asked: "What is your present position?" Respondents checked off the appropriate category: Underwriter, Supervising Underwriter, Underwriting Manager, Regional Manager, and Other.

## RELIABILITY OF THE SCALES

The intercorrelations between factors within each of the five scales suggest a reasonable degree of homogeneity

Table 3.6

Intercorrelations Among Factors in the Attitudes About Location in the Decision-Making Network Scale

(N = 236)

| | FACTOR 2 | FACTOR 3 |
|---|---|---|
| FACTOR 1 | .08 | 0 |
| FACTOR 2 | | .23*** |

***p<.001

Table 3.7

Intercorrelations Among Factors in the

Clarity of Role Requirements Scale

(N = 236)

| | FACTOR 2 | FACTOR 3[a] |
|---|---|---|
| FACTOR 1 | .23*** | -.04 |
| FACTOR 2 | | 0 |

[a]Specific Factor

***p<.001

(*i.e.*, the items all measure the same thing). It has already been mentioned that low or non-significant correlations were expected for the specific factors included in the work environment and role requirements scales. The issue, however, of just how homogeneous items in a scale should be before they are combined is a complex one.

Homogeneity, as Vroom (1960) has observed, "is not an end in itself but is important only so far as it contributes to the reliability and validity of the resulting score" (p. 25). While low homogeneity may be due to unreliability among items, it may also be due to the fact that the items or factors measure somewhat different but related things. We opt for the latter view, given the theoretical and methodological development of the scales. Moreover, as Vroom suggests, to the extent that the factors in the various scales are conceptually related and do represent variables which have similar effects, the combination of them into a single score will in fact broaden the range or breadth of the resultant scale.

Kerlinger (1967) has referred to reliability as the "internal consistency of a test" and indicates that "this means that the test items are homogeneous" (p. 430). One of the basic formulas for determining reliability based on internal consistency is coefficient alpha (Nunnally, 1967):

$$\alpha = \frac{k}{k-1}\left(1 - \frac{\Sigma\sigma_i^2}{\sigma_y^2}\right)$$

where k = number of test or scale items

$\Sigma\sigma_i^2$ = sum of the variance of item scores

$\sigma_y^2$ = variance of the test or scale scores.

Cronbach (1951) describes this measure as "the mean of all split-half coefficients resulting from different splittings of a test. Alpha is therefore an estimate of the correlation between two random samples of items from a universe of items like those in the test" (p. 297).

Of course, determining a satisfactory level of reliability usually depends upon how the measure is to be used. It has been pointed out that in the "early stages of research on predictor tests or hypothesized measures of a construct, one saves time and energy by working with instruments that have only modest reliability, for which purpose reliabilities of .60 or .50 will suffice" (Nunnally, 1967, p. 226). The standardized item coefficient alphas for the five scales ranged from .51 to .86. They are reported in Table 3.8. The number of items in each scale is relatively small ($\underline{M}$ = 7.6). This is important to note since the most typical method reported for improving the reliability of tests or measures is to make them longer (Cronbach, 1960; Kerlinger, 1964; Nunnally, 1967).

## DESCRIPTION OF THE STATISTICAL PROCEDURES FOR HYPOTHESIS TESTING

All hypotheses were tested individually for their degree of association with the dependent variable (organizational control), using Pearson product-moment correlations.

Table 3.8

Reliability of the Independent Variables

| Dimension | Standardized Item Coefficient Alpha |
|---|---|
| Personal Control | .53 |
| Work Environment | .80 |
| Supervisor | .86 |
| Location | .52 |
| Role Clarity | .51 |

Inasmuch as the direction of results had been specified, one-tailed tests of significance were performed. The .05 level of confidence was adopted as the basis for rejecting the null hypothesis.

Independent variables which were significantly associated with organizational control were next included in a multiple regression analysis. A step-wise inclusion procedure was utilized, whereby the variable that explained the greatest amount of variance unexplained by the variables already in the equation entered the equation at each successive step (Nie, *et al.*, 1975). The .05 level of confidence was adopted as the basis for rejecting the null hypothesis.

The results of this study are reported and described in the following chapter. Chapter Five contains a discussion of the significance of the findings and suggestions for future research and theory in the area of control in organizations.

# CHAPTER FOUR

## PRESENTATION AND DESCRIPTION OF RESULTS

This chapter is divided into four sections. Presented in the first section are the findings from tests of the original hypotheses, using Sample A. Following a brief discussion of their implications, the second section looks more closely at several methodological issues, including the revision of several measures of the dimensions. In addition, building upon the empirical data generated, the original hypotheses are revised and a more sophisticated set of hypotheses about individuals' organizational control is presented. In the third section are reported the results, using Sample B, from tests of this new set of hypotheses. The final section contains a summary and overview of the characteristics of individuals' control in organizations.

## DIMENSIONS OF ORGANIZATIONAL CONTROL: SAMPLE A

Hypotheses I-VI propose that various dimensions about the person and the situation will affect individuals' perceptions of organizational control. These hypotheses specifically state that individuals' (a) belief in personal control, (b) positive attitudes about their

work environment, (c) positive attitudes about their supervisor, (d) positive attitudes about their location in the decision-making network, (e) clarity of their role requirements, and (f) level in the organizational hierarchy will *all vary directly* with the degree to which they perceive having control in the organization.

These hypotheses were first tested using Sample A.($\underline{N}$ = 236). The degree of association was determined by intercorrelating organizational control with each of the above dimensions (one-tail $\underline{t}$-test of significance).

The data in Table 4.1 support five out of the six hypotheses. The correlations between these dimensions were in the predicted direction and were statistically significant beyond the .001 level of confidence. The relationship between personal control and organizational control was significantly different from zero ($p<.01$) but in a direction opposite to that predicted.

The data can be interpreted as meaning that each of the various dimensions are significantly related to organizational control. However, from the bivariate correlational analysis neither the overall predictability of the model, nor the relative importance of the separate dimensions of the model is very evident. Table 4.2 reports the results from an analysis of variance of organizational control. The relative importance of each dimension in "explaining" variance was examined using a computational procedure which determined the order of inclusion

Table 4.1

Correlations Between Organizational Control and Independent Variables, Sample A

| DIMENSIONS | ORGANIZATIONAL CONTROL (N = 229) |
|---|---|
| Personal Control | -.17** |
| Work Environment | .40*** |
| Supervisor | .25*** |
| Location | .29*** |
| Role Clarity | .26*** |
| Level | .37*** |

** p<.01

*** p<.001

Table 4.2

Step-Wise Multiple Regression Analysis

of Organizational Control, Sample A

| Dimensions in Order of Relative Contribution to Explained Variance | F-value to enter equation | Change in Multiple R | Change in $R^2$ |
|---|---|---|---|
| (1) Work Environment | 42.98*** | .40 | .16 |
| (2) Level | 24.21*** | .09 | .08 |
| (3) Personal Control | 12.56*** | .04 | .04 |
| (4) Supervisor | 8.68** | .03 | .03 |
| (5) Role Clarity | 1.71 | .00 | .00 |
| (6) Location | .29 | .00 | .00 |
| | Total Multiple R = | .56 | Total $R^2$ = .31 |

| ANOVA | df | SS | MS | F |
|---|---|---|---|---|
| Regression | 6 | 96.55 | 16.09 | 16.89*** |
| Residual | 224 | 213.38 | .95 | |

**p<.01

***p<.001

into the regression equation by the respective contribution of each dimension to explained variance (Nie, *et al.*, 1975). The attitudes about the work environment dimension accounted for just over one-half, and level in the organization another one-quarter, of the total amount of variance explained. Belief in personal control and attitudes about the supervisor accounted for approximately 4% and 3% of the explained variance respectively. Clarity of role requirements and location in the decision-making network together accounted for a negligible amount of the variance. The six dimensions as a least squares linear regression model have a multiple correlation equal to .56 and account for 31% of the variance associated with organizational control.

To this point, the analysis reveals that although each dimension separately correlates significantly with organizational control, considered together the separate dimensions account for differential amounts of explained variance. This suggests that the diemnsions are intercorrelated with one another; which is indeed the case as Table 4.3 illustrates. Belief in personal control is the only dimension completely independent of the others. Attitudes about the work environment and location in the decision-making network significantly correlate with all of the other dimensions. Clarity of role requirements and attitudes about the supervisor are also significantly intercorrelated. This relatively moderate degree of intercorrelation among the independent variables suggests

Table 4.3

Intercorrelations Between Dimensions of Organizational Control, Sample A

| Dimensions | Level | Personal Control | Super-visor | Role Clarity | Loca-tion |
|---|---|---|---|---|---|
| Work Environment | .22*** | .01 | .32*** | .40*** | .39*** |
| Level | -- | .09 | .01 | .09 | .41*** |
| Personal Control | | -- | .04 | -.07 | .08 |
| Supervisor | | | -- | .27*** | .21*** |
| Role Clarity | | | | -- | .25*** |
| Location | | | | | -- |

***p<.001

that each is somewhat redundant and, as a result, may tend to add little predictive power to one another (cf. Table 4.2).

In order to investigate possible "redundancy" effects and further identify the explanatory contribution of each dimension, the degree of association between each dimension and organizational control was analyzed, controlling for the remaining dimensions both individually and in combination. The partial correlations revealed a number of interesting things. Controlling for attitudes about the work environment did substantially affect the relationship between the separate dimensions and organizational control. When work environment was held constant, the zero-order correlation between organizational control and the level, supervisor, location, and role clarity dimensions were all reduced; while the personal control dimension increased slightly. Holding level in the organizational hierarchy constant increased the magnitude of the correlation between personal and organizational control but reduced the degree of association for the work environment and location dimensions. However, despite these changes, the first-order partial correlations between organizational control and each of the dimensions remained significant at better than the .01 level of confidence. The remaining first-order partials did not substantially affect the magnitude of the relationships between the variables (see Appendix IV, Table A).

In addition, the degree of association between organizational control, role clarity, and location was reduced to no better than chance when the remaining dimensions of the model were held constant. However, the relationships found between organizational control and the work environment, level, personal control, and supervisor dimensions remained significantly different from zero ($p<.01$) even when all of the other dimensions in the framework were held constant (fifth-order partial correlations).

Although it was not one of the original hypotheses of this study, the literature strongly suggests that there is a direct relationship between organizational control and organizational performance (effectiveness). It may be recalled that the research sample was originally dichotomized in terms of effectiveness ratings (high/low) by top home office officials. We may then ask two questions: (1) How does organizational performance affect the scale measures of the proposed dimensions of organizational control? and (2) Will individuals' organizational control be related to organizational performance? Accepting the null hypothesis in the former case would substantially increase our confidence in the validity of the scale measures.

The scale measures for individuals from high and low performing branch offices were compared using a two-tailed $t$-test of means. The results indicated that except

for role clarity there were no significant differences between individuals from high and low performing offices on these measures (see Appendix IV, Table B). This finding was further substantiated by including the five scale measures, along with organizational level, in an analysis of variance of organizational effectiveness. The resulting least squares regression equation was not significant ($F = 1.32$). Moreover, the role clarity measure which had been significantly different between individuals in high and low performing offices explained less than 3% of the variance associated with organizational effectiveness (see Appendix IV, Table C). These findings suggest that the dimensions of organizational control proposed in this study are relatively independent of differences between individuals which might be due to factors (*e.g.*, halo effect) attributable to overall organizational effectiveness.

It is reasonable to assume that since previous research has shown total amount of control in organizations to be positively related with organizational performance, that individuals' perceptions of control should also demonstrate a similar relationship. This, however, was not the case. Organizational control and branch office effectiveness were not significantly correlated ($r = .04$); nor did individuals (overall or by level) from high and low performing branch offices differ on this variable (see Appendix IV, Table D). It should be noted, in addition,

that in the organization studied here the relationship between total member control and organizational effectiveness, utilizing Tannenbaum's (1968) typical operationalization of organizational control, did not hold. This was contrary to predictions inherent in the literature (The results from this analysis are presented in Appendix IV, Figure A and Tables E-I).

The data from Sample A generally support the hypotheses concerning relationships between organizational control and dimensions of the individual and his/her situation in the organization. Only the relationship between organizational control and belief in personal control was in a direction opposite to that predicted. This finding warrants further discussion.

We have suggested that belief in personal control would be similar conceptually to Rotter's (1966) idea of internal control which has been studied extensively (Joe, 1971; Lefcourt, 1972). It is argued that internals believe that they are the "origins" rather than merely "pawns" in the everyday occurrence of events and activities. They can, and do, take command of situations and view outcomes as determined largely through the efforts of their own actions and/or within their own control. Previously we described the situational context of this study as involving a fairly mechanistic, highly-structured organization. This observation is dramatized by the control graph in Figure 4.1. Consequently, it can be

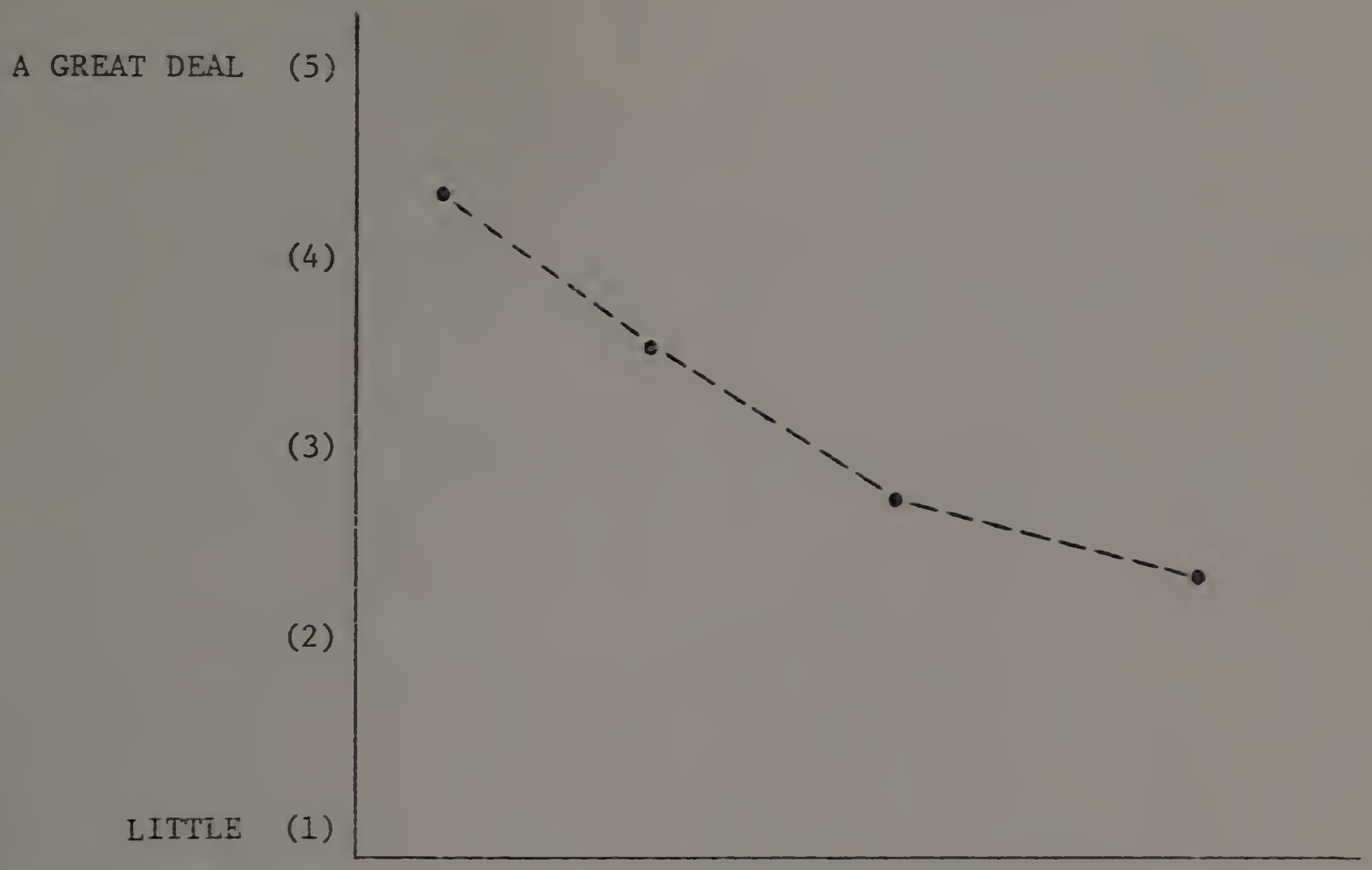


Figure 4.1 Control graph depicting the relationship between level in the organization and amount of control.

argued that those high on internal control (belief in personal control) would be more sensitive to the very limited actual opportunities to exercise substantive control within this type of organization. In fact, given the very high degree of structure and bureaucratization, they may feel greater frustration at this predicament than "externals" (those low on belief in personal control) and hence report less overall organizational control (Forsgren, 1971).

Research in this area has pointed out, for example, that internals are more attuned than externals to the realities of the work situation (Valencha, 1972). Other studies show that individuals high on internal control are more likely to be alert to, and take advantage of, those aspects of the environment that provide information useful for one's jcb behavior and attitudes (Broedling, 1975; Organ & Greene, 1974). A recent study by Szilagyi and Sims (1976) indicatesthat internal individuals are more adept than externals at gauging performance-to-reward and effort-to-performance expectancies. In light of the research evidence it seems reasonable to contend that the organizational context may moderate the relationship between internal control and organizational control. When the organizational context is a highly structured bureaucracy, we may hypothesize that belief in personal control will be inversely correlated with organizational control.

There is some evidence in the study to support this proposition. First, it was pointed out that when level in the organizational hierarchy is held constant, the relationship between belief in personal control (internal control) and organizational control increases. Also, it was shown that the amount of control within this organization does vary significantly by level in the organizational hierarchy (cf. Table 3.2) -- a finding consistent with the premises of bureaucratic organizations. However, a similar analysis of variance of belief in personal control by level did not reveal any significant differences between the three hierarchical levels. Finally, while the correlation between personal control and organizational control was negative at all three organizational levels, the magnitude of the relationship was strongest at the supervising underwriter level ($\underline{r}$ = .41, $\underline{p}$<.001).

The frustration of having strong beliefs in personal control but not being in a position where there is much opportunity to exercise control is, of course, the classic dilemma of the first-line supervisor (the "man in the middle"). This frustration appears to be mitigated at higher levels in the organization where there is a greater balance between actual organizational control and desired organizational control (or belief in personal control). Allutto and Acito (1974) have shown that individuals who experience "decisional deprivation" (*i.e.*,

actual participation in decision-making is less than desired participation) are significantly more frustrated and unsatisfied with their jobs and employers than are those individuals characterized as being at "decisional equilibrium."

Another issue generated by the findings presented is whether the relationships identified are artifacts of the operationalization of the concepts and/or resultant scale measures. In one sense, the probability of obtaining significant results with basically unreliable measures is not very great. Consequently, the findings thus far argue in favor of the reliability of the measures employed.

Still, there are a number of other methods often used for increasing confidence in the reliability and validity of sample findings. One is to use well-known and tested measures of the concepts (*e.g.*, Rotter's Internal-External Scale, House and Rizzo's Role Clarity Index) or at least to have obtained some notion of the correlation between these measures and the ones employed in the research study. Another is to use a greater range and variety of both subjects and settings. A third method is to use different types of research (data-gathering) techniques (*e.g.*, interviews and questionnaires). None of these alternatives were available in this study. Certainly all of them are critical next steps for futher empirical research in this area.

However, closely tied to these methods is the notion of "replication" -- which was utilized in this study. With a relatively large sample size ($\underline{N}$ = 474) it was feasible to randomly split the sample in half; using the first half to develop measures, operationalize concepts, and test hypotheses, and using the second half of the sample to refine, revise, extend, and validate (by replication) the findings obtained in the first half of the sample studied. This is, of course, exactly what has been proposed in this study. In this manner, the replication becomes a measure of internal consistency, and hence reliability: "How well do the results of each of two halves of a sample compare with one another?"

Before proceeding with the replication using Sample B, in the next section we consider further the scale measures themselves. This section will also present, based upon the empirical results of the first hypothesis testing, a revised and more elaborate set of hypotheses regarding the meaning of individuals' control in organizations.

## REFINED MEASURES AND REVISED HYPOTHESES

In Chapter Three it was pointed out that the moderate degree of homogeneity between factors within each scale measure was acceptable given the view that within each scale the factors were "conceptually related and represent variables which have similar effects." Their

combination into a single score, it was suggested at that time, would "broaden the range or breadth of the resultant score." This assumption can now be further explored.

Table 4.4 presents the intercorrelations between the factors within each dimension and organizational control. With very few exceptions the individual factors are significantly related to organizational control. In fact, 10 out of the 14 are significant beyond the .001 level; with the eleventh significant at the .05 level. For the most part this evidence, along with the intercorrelations among the factors within each scale (cf. Tables 3.4 to 3.7), substantiates the homogeneity and reliability of the scale measures.

However, it might also be argued that the four factors which are not significantly correlated with organizational control should be dropped from the measures since they contribute little to an understanding of the dependent variable and may, in fact, be dampening a relationship otherwise expected. Since neither Factor 3 in the role clarity measure nor Factor 1 in the location measure are significantly intercorrelated with the other factors within their respective measures, their inclusion may be affecting the internal consistency of the scale measures themselves. When these two factors are excluded, along with Factor 2 in the personal control measure,[1] the

[1]The exclusion of both Factors 1 and 2 in the personal control measure lowered the reliability coefficient beyond acceptable limits.

Table 4.4

Intercorrelations Between Scale Factors and Organizational Control, Sample A

| DIMENSIONS | ORGANIZATIONAL CONTROL |
|---|---|
| Work Environment | |
| Factor 1 | .24*** |
| Factor 2 | .35*** |
| Factor 3 | .22*** |
| Factor 4 | .27*** |
| Personal Control | |
| Factor 1 | -.07 |
| Factor 2 | .00 |
| Factor 3 | -.23*** |
| Supervisor | |
| Factor 1 | .32*** |
| Factor 2 | .11* |
| Role Clarity | |
| Factor 1 | .21*** |
| Factor 2 | .22*** |
| Factor 3 | .00 |
| Location | |
| Factor 1 | .10 |
| Factor 2 | .24*** |
| Factor 3 | .20*** |

*$p<.05$

***$p<.001$

alpha coefficients of internal consistency do improve, as shown in Table 4.5.

In spite of this modest increase in reliability, it is not obvious, given the development of the measures in the first place, how much of an improvement in explained variance and/or prediction is made by revising the three measures. In the next section both original and revised measures will initially be utilized in testing the hypotheses. In addition, despite the fact that the contribution of the role clarity and location dimensions to explained variance of organizational control was negligible, it seems premature at this stage to drop these dimensions from either the proposed framework or subsequent analysis.

The hypotheses which will be tested in the next section follow directly from and extend the empirical findings of the previous analysis:

HYPOTHESIS I:

Individuals' organizational control will be related:

(a) directly to attitudes about the work environment,

(b) directly to level in the organizational hierarchy,

(c) directly to attitudes about the supervisor,

(d) directly to the clarity of role requirements,

(e) directly to attitudes about location in the decision-making network, and

(f) inversely to belief in personal control.

Table 4.5

Reliability Coefficients for the Original and Revised Scale Measures, Sample A

| Dimensions | STANDARDIZED ITEM COEFFICIENT ALPHA | |
|---|---|---|
| | Original Scale | Revised Scale |
| Personal Control | .55 | .59 |
| Role Clarity | .51 | .63 |
| Location | .52 | .57 |
| Supervisor[a] | .86 | .86 |
| Work Environment[a] | .80 | .80 |

[a]There were no revisions in this dimension.

HYPOTHESIS II:

> The relationships proposed in Hypothesis I will be moderated by:
>
> (a) level in the organizational hierarchy, and
>
> (b) attitudes about the work environment.

HYPOTHESIS III:

> The linear model provided by the relationships proposed in Hypothesis I will discriminate between individuals on the organizational control variable.

Finally, while it was not one of the original hypotheses of this study, it was observed in the course of analysis that organizational control and organizational effectiveness were not correlated. This finding contradicts many of the earlier studies of Tannenbaum and his associates (1968). Since much of the interest in the organizational control phenomenon has been due to its association with organizational effectiveness, it seemed worthwhile to explicitly test this relationship in the organization at hand. The following hypothesis is worded in terms of the relationship which is to be expected based upon the literature:

HYPOTHESIS IV:

> Individuals' organizational control will be greater in high performing branch offices than in low performing branch offices.

## DIMENSIONS OF ORGANIZATIONAL CONTROL: A REPLICATION

The revised hypotheses presented in the previous section concerning the meaning of individuals' control in organizations were tested using Sample B ($\underline{N}$ = 236).

Pearson product-moment correlations were used to test both the direction and the degree of association between the variables (one-tail *t*-test of significance). The results, using both the original and revised scale measures of the dimensions, are reported in Table 4.6.

The data in Table 4.6 support Hypothesis I (a-f). All of the relationships were in the predicted direction and were statistically significant beyond the .05 level of confidence. There is only a slight difference between the correlation coefficients obtained with the revised as compared to the original measures.

Whether or not the separate dimensions when combined into a linear model would account for a significant amount of the variance associated with organizational control was tested using a multiple regression approach. The dimensions combined, as a linear least squares regression equation, did account for a significant degree of variance ($F = 14.98$, $p<.001$).[2] In addition, the relative contribution of each dimension individually to explained variance was examined. Using a step-wise regression inclusion

---

[2]Generally there was no discernable difference in either the findings or analyses whether the revised or original scale measures of the dimensions were used to test the hypotheses. Consequently, following Occam's Razor, only the results from the revised measures will be reported in the remainder of this study. The intercorrelations between the dimensions and the intercorrelations between the factors within each of the revised scale measures and organizational control are presented in Appendix IV, Tables J and K.

Table 4.6

Correlations Between Organizational Control and Independent Variables With Both the Original and Revised Measures, Sample B

| | ORGANIZATIONAL CONTROL (N = 233) | |
|---|---|---|
| Dimensions | Original Measures | Revised Measures[a] |
| Personal Control | -.15** | -.18*** |
| Work Environment | .35*** | .35*** |
| Supervisor | .12* | .12* |
| Location | .39*** | .42*** |
| Role Clarity | .23*** | .23*** |
| Level | .48*** | .48*** |

[a]The revised measures were personal control, role clarity, and location.

*p<.05

**p<.01

***p<.001

procedure, the analysis indicated that over four-fifths of the total amount of variance explained by the multiple regression model was due to the influence of a single dimension: level in the organizational hierarchy. This result is shown in Table 4.7. Attitudes about the work environment and location in the decision-making network account for the remainder of the explained variance.

Hypothesis II proposed that the relationships between the various dimensions and organizational control would be moderated by (a) level in the organizational hierarchy, and (b) attitudes about the work environment. The results of a partial correlation analysis support this hypothesis. As Table 4.8 reveals, holding either level, or work environment, or both dimensions, constant reduces substantially the zero-order correlations between organizational control and the various dimensions. The same reduction effect is generally true when location in the decision-making network is held constant. In fact, holding these three dimensions constant, individually or in combination, effectively reduces to no greater than chance (zero) the correlations between role clarity, personal control, attitudes about the supervisor and organizational control.

The correlations between level, work environment, location and organizational control are significantly different from chance ($p<.01$) regardless of whether any of the remaining dimensions individually or in combination

Table 4.7

Step-Wise Multiple Regression Analysis

of Organizational Control, Sample B

| Dimensions in Order of Relative Contribution of Explained Variance | F-value to enter equation | Change in Multiple R | Change in $R^2$ |
|---|---|---|---|
| (1) Level | 70.17*** | .48 | .23 |
| (2) Work Environment | 10.70*** | .04 | .03 |
| (3) Location | 5.13* | .01 | .02 |
| (4) Personal Control | .34 | .00 | .00 |
| (5) Supervisor | .00 | .00 | .00 |
| (6) Role Clarity | .00 | .00 | .00 |
| | Total Multiple R = | .53 | Total $R^2$ = .28 |

*p<.05

***p<.001

Table 4.8

Partial Correlations Between Organizational Control and the Proposed Dimensions of Organizational Control, Sample B

| PARTIAL CORRELATIONS CONTROLLING FOR: | DIMENSIONS | | | | | |
|---|---|---|---|---|---|---|
| | Level ($r$=.48)[a] | Work Env. ($r$=.35)[a] | Location ($r$=.42)[a] | Per. Cont. ($r$=-.18)[a] | Super. ($r$=.12)[a] | Role Clar. ($r$=.23)[a] |
| Level | -- | .21*** | .21*** | -.09 | .08 | .13* |
| Work Environment | .40*** | -- | .31*** | -.10 | .00 | .06 |
| Location | .33*** | .19** | -- | -.09 | .10 | .08 |
| Personal Control | .46*** | .32*** | .39*** | -- | .08 | .21*** |
| Supervisor | .47*** | .33*** | .41*** | -.16** | -- | .21*** |
| Role Clarity | .45*** | .28*** | .36*** | -.15** | .05 | -- |
| Level & Work Environment | -- | -- | .15** | -.05 | .01 | .04 |
| Level & Location | -- | .15** | -- | -.06 | .07 | .07 |
| Work Environment & Location | .31*** | -- | -- | -.06 | .03 | .00 |
| Level, Work Environment & Location | | -- | -- | -.04 | .02 | .01 |
| All other Dimensions[b] | .31*** | .12* | .14* | -.03 | .02 | .00 |

[a]Indicates zero-order correlation between dimension and organizational control.
[b]Fifth-order partial correlation between each dimension and organizational control (all other dimensions held constant).
*$p<.05$
**$p<.01$
***$p<.001$

are held constant. Location appears to have a moderately greater impact on the relationship between work environment and organizational control than vice versa. However, the second-order partial correlation between work environment and organizational control, holding constant both level and location, is the same as the second-order partial correlation between location and organizational control, holding both level and work environment constant. Thus, it appears that level in the organization provides the greatest independent contribution to explaining organizational control.

The relationship of this finding to understanding the meaning of organizational control was further explored. A multiple regression analysis of organizational control was performed with level in the organizational hierarchy *not* included in the model. The resultant least squares regression equation was statistically significant ($F = 13.33$, $p<.001$). However, in comparison with the linear regression model when level is included, the amount of explained variance was reduced from 31% to 23% (see Appendix IV, Table L for a comparison of these multiple regression findings).

Another way to look at the importance of level to organizational control and its interaction with the other proposed explanatory dimensions is to hold level constant in the analysis. When the proposed model, as a linear least squares regression equation, was applied to only one level of the organization at a time, it was not

statistically significant at the lowest level in the organization (*i.e.*, underwriters) but was reasonably significant ($p<.05$) at the next two higher levels (*i.e.*, supervising underwriters and underwriting managers). Also, the percentage of variance accounted for at these latter two levels was just about as good as or better than that explained when organizational level is included in the model directly (see Appendix IV, Table M).[3]

It was proposed in Hypothesis III that the linear model comprised of the various dimensions would discriminate between individuals on their amount of organizational control. Discriminant analysis was chosen as the appropriate technique to test this hypothesis.

Cooley and Lohnes (1971) have provided a geometric interpretation of discriminant analysis for the case of two groups and two variates, presented in Figure 4.2:

> The two sets of concentric ellipses represent the bivariate swarms for the two groups in idealized form. The two variates, X and Y, are moderately positively correlated. Each ellipse is the locus of points of equal density (or frequency) for a group. . . . The two points at which corresponding centours intersect define a straight line, II. If a second line, I, is constructed perpendicular to line II, and if the points in the two-dimensional

---

[3]One possible explanation for these differences between levels in the organization may result from the fact that the individual dimensions themselves are sensitive to the respondent's position in the organizational hierarchy. An analysis of variance of the separate dimensions revealed that, except for attitudes about the supervisor, the dimensions did significantly vary by level in the organizations ($p<.001$). Comparisons of levels on each of the dimensions, using Duncan's Multiple Range Test (Winer, 1971), indicated that although different, underwriters and supervising underwriters were generally more similar to one another than to underwriting managers.

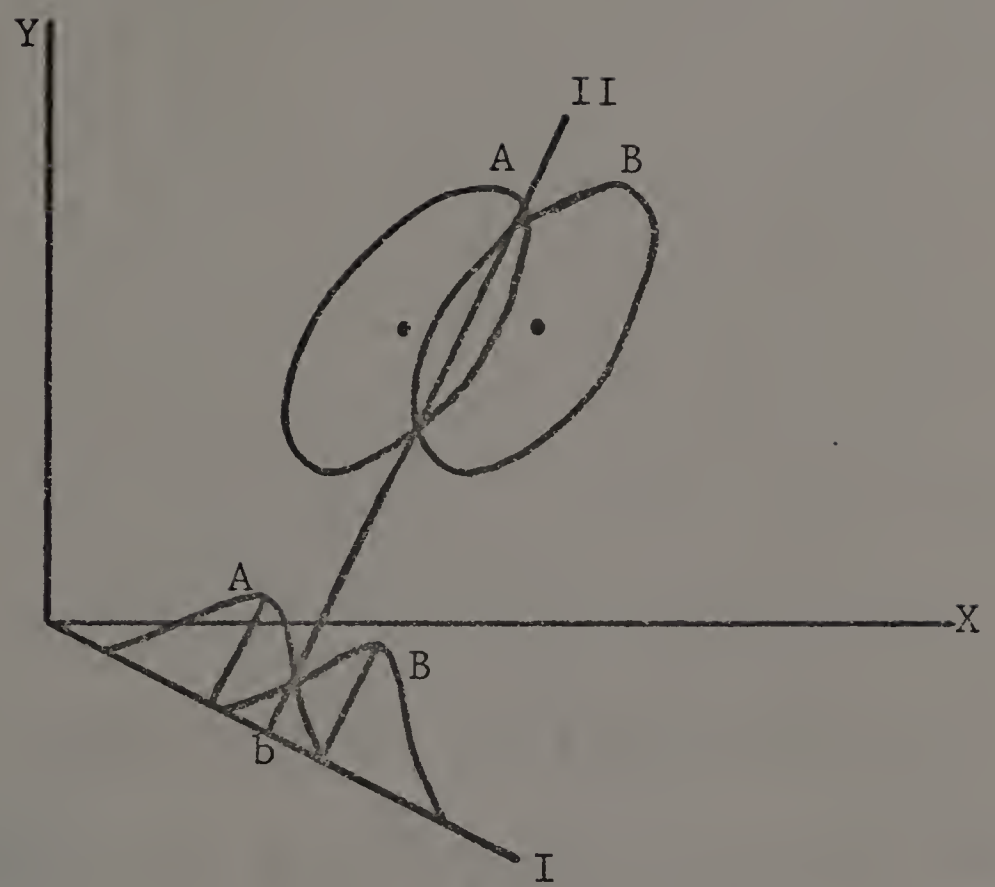


Figure 4.2 A geometric example of discriminant analysis. (From *Multivariate Data Analysis* by William W. Cooley and Paul R. Lohnes. Copyright 1971 by John Wiley & Sons, Inc.)

> space are projected into I, the overlap between the two groups will be smaller than for any other possible line. The discriminant function therefore transforms the individual test scores to a single discriminant score, and that score is the individual's location along line I. The point b where II intersects I would divide the one-dimensional discriminant space into two regions, one indicating probable membership in Group A and the other region for group B (pp. 244-45).

Basically, discriminant analysis is a method for determining linear combinations of original independent variables. It is designed to show large differences in the means of *a priori* defined groups of individuals (Fredericks, 1975c; Tatusoka, 1971).

The requirements of "*a priori* defined groups" was not possible to meet in this study. Rather the groups were determined by the discrete response categories to the question of how much overall influence individuals personally had on the organization. The categories and subsequent groupings were as follows:[4]

| | | |
|---|---|---|
| Little or No Influence | Group 1 | (N = 70) |
| Some Influence | Group 2 | (N = 68) |
| Moderate Influence | Group 3 | (N = 49) |
| Substantial Influence | Group 4 | (N = 46) |

The results of the discriminant analysis for this four-group instance are summarized in Table 4.9. The eigenvalues and their associated canonical correlations denote the relative ability of each discriminant function

---

[4]A fifth response category--A very great deal of influence--was combined with category four because of the former's small sample size (N = 12).

Table 4.9

Summary Table of the Results from Discriminant Analysis of Organizational Control (Groups = 4), Sample B

| Discriminant Functions | Eigenvalue | Canonical Correlation | Relative Percentage | Wilks' Lambda | Chi-Square |
|---|---|---|---|---|---|
| 1 | .53 | .59 | 92.5 | .63 | 109.69*** |
| 2 | .04 | .19 | 6.4 | .96 | 9.62 |
| 3 | .01 | .08 | 1.0 | .99 | 1.36 |

***$p < .001$

to separate the groups. The eigenvalues indicate the relative importance of the function in the sense of how much of the total variance exists in the discriminating variables. Similarly, the canonical correlation expresses how closely the discriminant function and the "determined group variable" are related. Geometrically, they can be considered "an exploration of the extent to which individuals occupy the same relative positions in one measurement space as they do in the other" (Cooley & Lohnes, 1971, p. 169). The canonical correlation squared can be interpreted as the proportion of variance in the discriminant function explained by the groups (Klecka, 1975). Wilks' Lambda is a multivariate test criterion used in testing differences of means. It is inversely related to the magnitude of differences or strength of a relationship; *i.e.*, the smaller the value of lambda, the greater the difference in question. Finally, the statistic which is used to test the significance of an observed lambda is distributed approximately as a chi-square with p (K-1) degrees of freedom (Tatusoka, 1971). The chi-square value tells whether or not the discriminating power in the variables is significant.[5]

---

[5]The researcher must also decide about the prior probabilities which will be assigned to the determined groups. One option is to assume that the population parameters are distributed equally for all groups. The other choice is to use the sample parameters (which are known given the distribution of the determined or "grouping variable" in the sample). The former approach, which is the more conservative, was adopted. Subsequent analysis, however, was performed using the sample parameters as prior

As Table 4.9 points out, the first function accounts for over 92% of the discriminating information available in the three discriminant functions. After the first discriminant function, lambda increases and the chi-square values are not significant. This indicates that it would not be worthwhile to derive additional discriminant functions since they would not measurably increase the ability to discriminate between the groups. Other researchers (Klecka, 1975) have pointed out that usually statistically insignificant functions are ignored because they do not contribute much of theoretical or practical importance.

Consequently, the first discriminant function, significant beyond the .001 level of confidence, was used to classify individuals in Sample B. As Table 4.10 reports, using this function, over 44% of the individuals were correctly assigned to the group (response category) to which they actually belonged. While there is overlap among the groups, the results of the classification routine were significantly greater than that expected due to chance alone ($p<.001$), and basically provide support for Hypothesis III.

A closer inspection of Table 4.10, however, revealed that over one-third of the misclassifications occurred between groups 1 and 2 and between groups 3 and 4

---

probabilities. It revealed only a very modest improvement (less than 1%) in the classification ability of the discriminant function.

Table 4.10

Classification Results of Discriminant Analysis of

Organizational Control (Groups = 4), Sample B

| ACTUAL GROUP MEMBERSHIP | N | PREDICTED GROUP MEMBERSHIP | | | |
|---|---|---|---|---|---|
| | | Group #1 | Group #2 | Group #3 | Group #4 |
| Group #1 | (70) | [46] | (16) | 8 | 0 |
| Group #2 | (68) | (37) | [16] | 8 | 7 |
| Group #3 | (49) | 6 | 11 | [15] | (17) |
| Group #4 | (46) | 9 | 4 | (7) | [26] |

44.2% of KNOWN cases [correctly] classified

$\chi^2 = 45.84$, $p<.001$

(circled in Table 4.10). Testing the equality of each pair of groups revealed that groups 1 and 2 were not significantly different and that the difference between groups 3 and 4 reached only a moderate level of significance ($p<.05$). All other possible comparisons between groups were significant beyond the .001 level of confidence (see Appendix IV, Table N). Since these groupings were not as distinct as they might be, the response categories were re-evaluated. Those with "some" and "little or no influence" were clustered together as *LOW* on influence and those with "moderate" and "substantial influence" were clustered together as *HIGH* on influence. The discriminant function which resulted from this dichotomized grouping was statistically significant ($\Lambda = .68$, $p<.001$), with an eignevalue equal to .46 and canonical correlation equal to .56. In addition, as shown in Table 4.11, this discriminant function successfully assigned over 78% of the individuals to their proper grouping ($p<.001$).

Whether clustering into four or dichotomizing into two groups, the order of inclusion (using a step-wise procedure with Wilks' Lambda as the criterion statistic) and relative contribution of the dimensions to the discriminant function was the same. Level in the organization entered the function first and was the most significant discriminant criteria. Location and work environment were next in terms of relative contribution.[6]

---

[6]The ordering and standardized discriminant coefficients in the four- and two-group analysis are presented in Appendix IV, Table O.

Table 4.11

Classification Results of Discriminant Analysis of Organizational Control (Groups = 2), Sample B

| ACTUAL GROUP MEMBERSHIP | N | PREDICTED GROUP MEMBERSHIP High | Low |
|---|---|---|---|
| High Control | (138) | 118 | 20 |
| Low Control | (95) | 31 | 64 |

78.1% of KNOWN cases correctly classified

$\chi^2 = 73.65$, $p<.001$

The step-wise inclusion procedure revealed that some of the dimensions were not only more useful than others in discriminating among the groups but that the full set of dimensions contained redundant information about the group differences. For example, the classification of individuals into their correct group, using only the dimensions of level, location, and work environment was just as successful excluding the remaining three dimensions as it was including them in the analysis. This suggests that the personal control, role clarity, and supervisor dimensions contributed very little, if anything, to what was already accounted for and explained by the other dimensions.

However, this does not necessarily mean that these three dimensions were not of any value. In the obsence of knowledge about level, location, and attitudes about the work environment, the three dimensions of personal control, role clarity, and attitudes about the supervisor were capable of correctly classifying 34.3% of the individuals in the four-group situation and 61.4% in the two-group situation. Both results are still significantly better than would be expected due to chance alone ($p<.001$).[7]

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[7]It should be noted that these three dimensions alone account for very little of the total variance which exists in the discriminating variables. Likewise, their associated canonical correlations indicate that the discriminant function is only moderately related to the "determined" groups. Appendix IV, Table P presents the standardized discriminant coefficients, eigenvalues, canonical ocrrelations, Wilks' Lambda, and classification

Finally, in order to cross-validate the findings obtained from the discriminant analysis, individuals in Sample A were classified according to the discriminant function which had been derived from Sample B. The results of this classification for the two-group clustering is shown in Table 4.12. Approximately 67% of the individuals were still correctly assigned to their proper groupings, which is significant beyond the .001 level of confidence.

Hypothesis IV suggested that individuals' organizational control should be greater in high performing branch offices than in low performing branch offices. This hypothesis was not supported. A test of the differences between means for individuals from high and low performing branch offices was not significant ($t$ = .60). This is presented in Table 4.13. The correlation between organizational control and organizational effectiveness was also insignificant ($r$ = .02).

## SUMMARY OF RESULTS

The results from the bivariate correlational and step-wise multiple regression statistical tests of the hypothesis in Sample A, Sample B, and when both samples are combined are summarized in Tables 4.14 and 4.15.

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results associated with the inclusion of these dimensions in the discriminant function. Also shown are the results when only level, location, and attitudes about the work environment comprise the discriminant function.

Table 4.12

Crossvalidation Analysis: Classification of Sample A Using Discriminant Function Derived from Sample B (Groups = 2)

| ACTUAL GROUP MEMBERSHIP | N | PREDICTED GROUP MEMBERSHIP: High Control | PREDICTED GROUP MEMBERSHIP: Low Control |
|---|---|---|---|
| High Control | (124) | [92] | 32 |
| Low Control | (107) | 45 | [62] |

66.7% of KNOWN cases [correctly] classified

$\chi^2 = 45.68$, $p<.001$

Table 4.13

Comparison of Organizational Control
Between Individuals from High and
Low Performing Branch Offices,
Sample B

| | N | M | SD | t | p[a] |
|---|---|---|---|---|---|
| "How Influential Are You?" | | | | .60 | n.s. |
| High Performing Offices | 111 | 2.41 | 1.20 | | |
| Low Performing Offices | 122 | 2.31 | 1.20 | | |

[a] *t*-test, one-tailed.

Table 4.14 reports both the zero-order correlations and fifth-order partial correlations between the separate dimensions of the model and organizational control. Table 4.15 indicates the order of inclusion and relative contribution of each dimension to explaining variance associated with organizational control. The results are generally in agreement with the major hypotheses proposed in this study.

*Personal Control*.--A significant but low negative correlation was found between the belief in personal control dimension and organizational control. Holding the remaining dimensions of the model constant (fifth-order partial correlation) did not, when the samples were combined, substantially affect the direction or the degree of this relationship. The contribution of this dimension to explained variance in the multiple regression analysis was minimal.

*Supervisor*.--The correlation found between the attitudes about the supervisor dimension and organizational control was positive and low but statistically significant. The partial correlation, when the samples were combined, was not significant. The contribution of this dimension to explained variance was generally negligible.

*Role Clarity*.--The magnitude of the positive and significant correlation found between the clarity of role requirements dimensions and organizational control was low. In all cases the partial correlation between these two

Table 4.14

Summary of Results from Correlations Between Organizational Control and Independent Variables for Sample A, Sample B, and Combined Samples

| DIMENSIONS | SAMPLE A (a) | SAMPLE A (b) | SAMPLE B (a) | SAMPLE B (b) | COMBINED SAMPLES (a) | COMBINED SAMPLES (b) |
|---|---|---|---|---|---|---|
| Level | .37*** | .32*** | .48*** | .31*** | .43*** | .30*** |
| Work Environment | .40*** | .23*** | .35*** | .21* | .37*** | .18*** |
| Location | .29*** | .08 | .42*** | .14* | .35*** | .06 |
| Personal Control | -.17** | -.24*** | -.18*** | -.03 | -.20*** | -.15*** |
| Role Clarity | .26*** | .04 | .23*** | .00 | .25*** | .05 |
| Supervisor | .25*** | .17** | .12* | .02 | .19*** | .07 |

NOTE: Whenever the samples are combined the analysis uses the revised scale measures.

(a) Zero-order correlations.
(b) Fifth-order partial correlation between dimension and organizational control (all other dimensions held constant).

* $p<.05$
** $p<.01$
*** $p<.001$

Table 4.15

Summary of Results from Step-Wise Multiple Regression Analysis of Organizational Control Model for Sample A, Sample B, and Combined Samples

| SAMPLE A | | SAMPLE B | | COMBINED SAMPLES | |
|---|---|---|---|---|---|
| Dimensions in Order of Relative Contribution to Explained Variance | $\underline{R}^2$ | Dimensions in Order of Relative Contribution to Explained Variance | $\underline{R}^2$ | Dimensions in Order of Relative Contribution to Explained Variance | $\underline{R}^2$ |
| (1) Work Environment | .16 | (1) Level | .23 | (1) Level | .18 |
| (2) Level | .08 | (2) Work Environment | .03 | (2) Work Environment | .07 |
| (3) Personal Control | .04 | (3) Location | .02 | (3) Personal Control | .02 |
| (4) Supervisor | .03 | (4) Personal Control | .00 | (4) Role Clarity | .00 |
| (5) Role Clarity | .00 | (5) Supervisor | .00 | (5) Supervisor | .00 |
| (6) Location | .00 | (6) Role Clarity | .00 | (6) Location | .00 |

variables was no better than would be expected due to chance alone. The contribution of the role clarity dimension to explained variance was consistently negligible.

*Location*.--A moderate, significant, and positive correlation was found between the attitudes about location in the decision-making network dimension and organizational control. However, the partial correlation was generally not significant. The contribution of this dimension to explained variance was generally negligible.

*Work Environment*.--The moderate correlation found between the attitudes about the work environment dimension and organizational control was positive and significant. In all cases, the fifth-order partial correlation remained positive and statistically significant. The contribution of the work environment dimension to explained variance was generally moderate.

*Level*.--The correlation found between level in the organizational hierarchy and organizational control was strong, positive, and highly significant. In all cases, holding the remaining dimensions of the model constant did not appreciably affect the magnitude of this relationship. In addition, this dimension generally accounted for two-thirds of the variance explained by the least squares regression equation.

In brief, the hypothesis testing revealed that all of the dimensions proposed were significantly correlated with organizational control. However, when considered

together the dimensions made differential contributions to explaining the variance associated with organizational control. In fact, when considered together, four of the dimensions (personal control, supervisor, role clarity, and location) made little or no contribution at all. Generally, level in the organizational hierarchy and attitudes about the work environment accounted for the variance explained by the multiple regression model.

This finding suggests two things. First, that there was generally a high degree of intercorrelation existing between the various dimensions and hence redundancy in their contribution tc explaining variance[8] (see Appendix IV, Table Q). Second, that there may not have been a great deal of variance in the organizational control variable to begin with. This latter contention is borne out by the results of the discriminant analysis.

It was hypothesized, and subsequently determined, that the model comprised of these dimensions would favorably discriminate between individuals on the organizational control variable. However, the discriminant function was substantially more successful in correctly assigning

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[8]In fact, the step-wise regression procedure was utilized since it allowed for some check on the degree of multi-collinearity among the dimensions. Various techniques have been proposed for eliminating or reducing multicollinearity (Fredericks, 1975b; Johnston, 1972). One of these techniques is to drop one of two highly intercorrelated variables. In essence this is what the stepwise procedure accomplishes by selecting at each step the independent variable "which has the largest squared partial correlation with the dependent variable" (Nie, *et al.*, 1975, p. 345).

individuals to their proper organizational control group (response category) when the latter variable was dichotomized rather than quadrimized. Indeed, the predictive validity of the model in Sample B increased from 44% correct classification of individuals for the four-group clustering to 78% correct for the two-group clustering. An equivalent magnitude of differences in correct classifications was obtained in Sample A (38% vs. 67%).

In addition, the relative contribution of the separate dimensions to explaining organizational control was similar in the discriminant and multiple regression analyses. Level in the organizational hierarchy and attitudes about the work environment correctly classified 74.2% of the individuals in the entire sample for the two-group clustering. Including the location dimension increased the predictive validity of the discriminant function by only 3.9%, while the inclusion of the personal control, supervisor, and role clarity dimensions did not improve the prediction at all.[9]

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[9]In the last section the location dimension was included in the discriminant analysis at one point along with level and work environment while the remaining three dimensions were excluded. The choice of a cut-off or dividing point was based upon a partial F ratio, statistically significant beyond the .05 level. Nie, *et al.* (1975), explain the partial F ratio as "the likelihood ratio of equality on the test variable over all the groups, given the distribution produced by the variables already entered. Expressed in another way, this is a test for the statistical significance of the amount of centroid separation *added* by this variable above and beyond the separation produced by the previously entered variables" (p. 453). The partial F ratios for the personal control, supervisor, and role clarity dimensions were not significant, in this regard; even though the overall discriminant function with all six

Since hierarchical level played such an important role in explaining organizational control, it was revealing to examine the separate dimensions and model according to the respondent's level in the organization. These results, by level, are summarized in Table 4.16-4.18 and are described below.

*ORGANIZATIONAL CONTROL for UNDERWRITERS*.--The proposed model did not account for any substantial amount of the explained variance associated with organizational control at the underwriter level in the organization ($\underline{R}^2$ = .08), even though the regression equation was statistically significant ($\underline{p}$<.001). Not surprisingly this finding suggests that there is little control perceived at the lowest level in the organization. Indeed, over 70% of the individuals at this level responded that they have only "some," or "little or no," influence in the organization (which coincides with the perceptions of respondents from the next highest hierarchical levels). Whatever control there is at this level seems to be largely accounted for by member's attitudes about their work environment. This positive attitude may generate feelings of: "I like this place and I wouldn't like it if I didn't have any control, so I must have *some* control in this organization."

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dimensions included was statistically significant (based upon the Wilks' Lambda criteria). Finally, since location and level were highly intercorrelated ($\underline{r}$ = .52) it appears that the inclusion of location into the discriminant function was redundant.

Table 4.16

Correlations Between Organizational Control and Independent Variables by One's Level in the Organizational Hierarchy, Combined Samples

| Dimensions | ORGANIZATIONAL CONTROL | | |
|---|---|---|---|
| | Underwriters (N = 288) | Supervising Underwriters (N = 104) | Underwriting Managers (N = 72) |
| Work Environment | .22*** | .40*** | .46*** |
| Personal Control | -.16** | -.23** | -.32** |
| Location | .11* | .29*** | .21* |
| Role Clarity | .16** | .22** | .36*** |
| Supervisor | .15** | .18* | .32** |

* p<.05

** p<.01

*** p<.001

Table 4.17

Multiple Regression Analysis of Organizational Control Model by One's Level in the Organizational Hierarchy, Combined Samples

UNDERWRITERS

| ANOVA | df | SS | MS | F |
|---|---|---|---|---|
| Regression | 5 | 28.01 | 5.60 | 4.73*** |
| Residual | 282 | 334.20 | 1.19 | |

***p<.001
Multiple R = .28
$R^2$ = .08

SUPERVISING UNDERWRITERS

| ANOVA | df | SS | MS | F |
|---|---|---|---|---|
| Regression | 5 | 20.74 | 4.15 | 5.02*** |
| Residual | 98 | 81.02 | .83 | |

***p<.001
Multiple R = .45
$R^2$ = .20

UNDERWRITING MANAGERS

| ANOVA | df | SS | MS | F |
|---|---|---|---|---|
| Regression | 5 | 17.28 | 3.46 | 5.34*** |
| Residual | 66 | 42.67 | .65 | |

***p<.001
Multiple R = .54
$R^2$ = .29

Table 4.18

Step-Wise Multiple Regression Analysis of Organizational Control by One's Level in the Organizational Hierarchy, Combined Samples

| UNDERWRITERS | | SUPERVISING UNDERWRITERS | | UNDERWRITING MANAGERS | |
|---|---|---|---|---|---|
| Dimensions in Order of Relative Contribution to Explained Variance | $\underline{R}^2$ | Dimensions in Order of Relative Contribution to Explained Variance | $\underline{R}^2$ | Dimensions in Order of Relative Contribution to Explained Variance | $\underline{R}^2$ |
| (1) Work Environment | .05 | (1) Work Environment | .16 | (1) Work Environment | .22 |
| (2) Personal Control | .02 | (2) Location | .03 | (2) Personal Control | .07 |
| (3) Supervisor | .01 | (3) Personal Control | .01 | (3) Supervisor | .01 |
| (4) Role Clarity | .00 | (4) Supervisor | .00 | (4) Role Clarity | .00 |
| (5) Location | .00 | (5) Role Clarity | .00 | (5) Location | .00 |

*ORGANIZATIONAL CONTROL for SUPERVISING UNDERWRITERS.*--The proposed model of organizational control did account for a moderate amount of explained variance at the supervising underwriting manager level in the organization ($\underline{R}^2$ = .20). Although the dimensions were each moderately correlated with organizational control, attitude about the work environment made the most substantive contribution to the variance explained by the least-squares regression equation. Location and personal control also contributed to the explained variance.

*ORGANIZATIONAL CONTROL for UNDERWRITING MANAGERS.*--The model accounted for a moderate amount of explained variance at the underwriting manager level ($\underline{R}^2$ = .30). In fact, the percentage of variance accounted for at this level is as good as that when hierarchical level is included directly in the model. While the work environment dimension accounted for the bulk of the explained variance, belief in personal control also made a significant contribution. There was considerable similarity between the order of inclusion and relative contribution of the dimensions in the model for the underwriters and underwriting managers.

*ORGANIZATIONAL CONTROL AND EFFECTIVENESS.*--The data do not substantiate at all the relationship hypothesized in the literature between organizational control and organizational effectiveness. As shown in Table 4.19, there is no significant difference in the amount of individuals' organizational control from high performing branches compared

Table 4.19

Comparison of Organizational Control Between Individuals from High and Low Performing Branch Offices, Combined Samples

| | N | M | SD | t | p[a] |
|---|---|---|---|---|---|
| "How Influential Are You?" | | | | .67 | n.s. |
| High Performing Offices | 218 | 2.43 | 1.18 | | |
| Low Performing Offices | 249 | 2.36 | 1.19 | | |

[a] *t*-test, one-tailed.

to low performing branch offices ($t$ = .67). A similar result was obtained when comparing total amount of control and organizational effectiveness (see Appendix IV, Table R).

The findings reported in this chapter are in substantial agreement with the major hypotheses advanced and do provide important insight into some of the characteristics of individuals' control in organizations. The implications of these findings for understanding and conceptualizing organizational control are discussed in the next chapter, as well as areas for future research and theory.

# C H A P T E R  F I V E

## DISCUSSION AND CONCLUSIONS

This chapter is divided into three sections. The first section discusses the significance of the findings and their implications for understanding the meaning and importance of control in organizations. The next section considers the measurement of organizational control. The final section points out the limitations of the study and suggests areas for future empirical research and theory.

## UNDERSTANDING CONTROL IN ORGANIZATIONS

The studies of Tannenbaum (1956a, 1961, 1968) and others (Bachman, 1968; Bowers, 1964; Likert, 1961; Mann & Hoffman, 1960; Morse & Reimer, 1956) have shown that high levels of mutual control and influence are part of a process leading to more effective organizations, whether the criterion of effectiveness is that of productivity, the intelligent use of human resources, or more healthy and positive member attitudes. Both Likert (1961) and Tannenbaum (1968) suggest that organizational control results in effectiveness because it produces a more tightly-knit organization -- one in which there is a greater degree of interaction, participation and mutual influence within and between hierarchical levels and a considerable degree

of integration and uniformity in relevant attitudes and behaviors among all members. Moreover, the exercise of control is likely to be associated with higher employee motivation, identification, job satisfaction and sense of responsibility, all of which result in better coordination of efforts toward obtaining organizational objectives. Field studies in organizations where workers were actually given more control revealed a similar pattern (Katz, Maccoby, & Morse, 1950; Mann & Hoffman, 1960; Morse & Reimer, 1956).

The "process" of control in organizations is both complex and dynamic. It is characterized by interdependencies between people and personalities, roles and norms, and structures and technologies. Moreover, every act of control has both pragmatic and symbolic implications (Tannenbaum, 1962). Control implies something about one's areas of choice (freedom) and restriction; about what one can or will do or what one must do. Psychologically, control is emotionally and culturally value-laden and may connote status, dominance, submission, competence, criticism, guidance, fear, or reward. Still, for whatever reasons, having control is generally preferred and desired in American society. This desirability, notes Tannenbaum (1962): "May be attributed to the gratification which individuals may derive simply by knowing that they are in control -- from the psychological satisfactions which come from exercising control. Or it may derive from the

pragmatic implications of power -- being able to affect the work situation in ways favorable to one's personal interest, as the individual sees them" (p. 243).

This study began by asking what "things" characterized or contributed to the meaning of control for organizational participants. Six separate dimensions have been identified which are significantly correlated with organizational control. Their multiple correlation explains more than one-fourth of the variance associated with organizational control. The model is also capable of successfully discriminating between individuals as to the amount of control they possess. The findings from this study suggest that perceptions of control depend upon the unique personality and experiences of individuals in the control relationship, the structure of the organization in which these relationships occur, and the level in the hierarchy from which control is viewed.

*ORGANIZATIONAL CONTROL and PERSONALITY.*--Research has indicated that individuals, according to their personality, differ in their attribution of causality for life's events (Minton, 1968; Rotter, 1966) and in their reactions to patterns of control (Haythorn, 1958; Tannenbaum, 1962; Tannenbaum & Allport, 1956; Vroom, 1960; Wood, 1972b). In one early field experiment it was shown that some individuals would have preferred a type of control structure (generally autocratic vs. democratic) other than the one they were involved in (Morse & Reimer, 1956). In

this same study, Tannenbaum (1957) noted evidence of slight changes in individual personality after a year's exposure to different patterns of control. These changes were in the direction of increasing the fit between workers' personality and the nature of the control structure. Argyris (1957) makes a similar observation about how the nature of organizational life "trains" individuals to act in certain ways.

The movement of personality toward equilibrium with its environment is one possible interpretation of the inverse relationship found between organizational control and belief in personal control. Since those high on this latter disposition are generally more attuned to the realities of their environment (Organ & Greene, 1974; Valencha, 1972), it is reasonable to contend that they may be more frustrated with the discrepancy between their expectations and the very limited opportunities provided in this organization to exercise control and to experience "personal" responsibility. At the same time it would be expected that this frustration would dissipate at higher levels in the organization; which, however, was not the case.

This confusion may be due to the fact that the concept was operationalized from questions in reference to a specific organization rather than from more generalized questions about beliefs, values, and orientations. Consequently, it may be argued that the dimension measures

attitudes unique to this organization rather than generalized personality characteristics. Being dependent upon others and yet having organizational control appear to be incongruous in a highly structured bureaucratic organization.[1] An inverse relationship between them under this circumstance would make sense. This raises the issue of possible interaction effects between internal-external control, organizational context (degree of bureaucratization), and level in the hierarchy and leaves unanswered the relationship between personal and organizational control.

In this regard, several laboratory studies have suggested that influence (control) is more strongly related to satisfaction for individuals with strong, as opposed to weak, power motives, and that for individuals with strong affiliation motives participation is more strongly related to satisfaction than is influence (Wood, 1972b). Further research is needed to specify attributes of organizational members, as well as the possible interactions of these characteristics with features of the situation, as they affect individuals' levels of participation and control.

*ORGANIZATIONAL CONTROL and ORGANIZATIONAL STRUCTURE.*--The significant contribution of organizational

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[1]This is probably due to the traditional fixed-pie assumption about the amount of control available within organizations.

structure (*i.e.*, hierarchical level) on control may well help to explain the relatively minor importance of the role clarity, supervisor, and location dimensions in the overall model of organizational control. The fact of the matter is that in a highly structured bureaucracy there may be very little variance in the amount of control available within each level and a considerable amount between levels. Indeed, research studies point out that the hierarchy not only implies differences in status, formal authority, discretion, responsibility, and rewards but results in differences in perceptions, cognitions, sources of information, communications flow, loyalty and support for the organization. For these and other reasons, Tannenbaum, *et al.* (1974) comment that the "hierarchy, which is a basic *organizational* characteristic, has profound *psychological* implications for members" (p. 8).

When the effects of hierarchical level are partialed out in the bivariate and multivariate analyses the relationships found between the dimensions of role clarity, supervisor, and location and organizational control are no better than chance. The classical management control processes embodied in the hierarchy -- such as scalar processes, division of labor, chain of command, authority of position -- seem to have effectively accounted for the potential contribution which the supervisor's personal influence (Pelz, 1952), length of service in the organizational (Mechanic, 1962), degree of organizational

member involvement (Smith & Ari, 1964), and clarity of role requirements (Kahn, *et al.*, 1964) have been hypothesized to have in explaining why individuals perceive the amount of organizational control they do.[2] One fundamental reason for this departure from previous studies is undoubtedly due to the neglect by earlier researchers in examining possible interactions among their proposed independent variables. The present study did not neglect these interactions.

Contrary to Mechanic's (1962) arguments, the notion of increased control arising out of access to information, persons, and instrumentalities as embodied in the supervisor and location dimensions did not pan out, and this was especially true for lower-level participants (underwriters). While Mechanic discusses the use of informal, as opposed to formal, relationships, there is little evidence to suggest that underwriters in a traditional insurance company have asserted their ability to manipulate the organization (through its dependency on them) in the same sense as hospital attendants or prison inmates (Scheff, 1961; Sykes, 1956). Miller (1975) has examined the phenomenon of isolation, or lack of access, and its consequences for organizational members. He finds that lack of access to the formal control structure is clearly linked with individuals' low status, expertise, and professional ranking. These same variables, in turn,

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[2]There may be, of course, other important relationships which these dimensions may have with organizational

also affect one's interpersonal attractiveness, or the amount of influence or control one has in the eyes of others.

Furthermore, the findings suggest that being included or knowing about, or having access to the organization's decision-making network, is not easily translated into a conscious perception of organizational control. In fact, the relationship appears to be more complex than previously formulated. In today's society it may be that participation is expected and therefore contributes very little to one's sense of control in the organization unless there is accompanying accountability, authority, and responsibility. This viewpoint argues that it is possible that individuals have developed institutional answers for resolving discrepancies between actual and desired levels of control (cf. Schuler & Schaller, 1974).

In addition, the model does not do a particularly good job of explaining variance at the underwriter level probably because there is no real control available at this level in the organization. The impact of the hierarchy/bureaucracy is most profound at this level, and underwriters seem well aware of this fact and their concomitant lack of organizational control. Their jobs are often simply the mechanical application of the underwriting manual.

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performance or member attitudes but such exploration was clearly beyond the scope of the present investigation.

In bureaucratic organizations it is likely that control and authority are conceptually and pragmatically interrelated. Given the rigidity associated with bureaucratic structures it is even more likely that control and authority are so intertwined as to be seen as synomous. Indeed, Tannenbaum and others (1974) indicate that the amount of authority and control reported by participants in ten American manufacturing firms follows this pattern. They reported a reliability coefficient of .70 for two pairs of questions (ideal and actual) about authority and control: "To what extent can you. . .have authority over other people" and "How much influence do. . .you personally actually have on what happens in this plant?" Since individuals at lower levels in the organization have little formal authority they are unlikely to attribute to themselves much control or influence as to what goes on in the organization.

Finally, there may be some doubt as to the reliability of the measurement of the personal control, role clarity, supervisor, and location dimensions. It was noted earlier that the larger study from which the items for these measures were taken was not originally conceived with either these scales or concepts in mind. In this sense, they may be thought of as "make-do" measures of the dimensions (independent variables). Still, both their content validity[3] and degree of internal consistency were

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[3]Which is always, as Kerlinger (1964) notes, basically judgmental.

adequate and acceptable; although probably not as substantial as might be liked. In addition, the similarity of the results obtained from the hypotheses testing of Sample A and Sample B indicates a substantial degree of internal validity. Future efforts should be directed toward establishing some indication of the concurrent and construct validity of these measures. Since there are other measures of these concepts available which have been validated (*e.g.*, Rotter's Internal-External Scale, House and Rizzo's Role Clarity Index), researchers may want to employ them in further investigations of the findings of this study.

*ORGANIZATIONAL CONTROL, SATISFACTION, and ORGANIZATIONAL EFFECTIVENESS.*--The most studied aspect of organizational control has been its relationship to organizational effectiveness. Organizational effectiveness, in turn, has generally been considered in terms of participants' positive attitudes (*e.g.*, morale, satisfaction, loyalty, commitment) and performance (*e.g.*, cost control, rate of growth, sales volume, time standards). The dimension of attitudes about the work environment is largely a job satisfaction measure and might be conceived of broadly as a composite index of how well the organization meets the individual's needs.

The relationship between positive member attitudes (satisfaction) and control in task situations has been the subject of considerable study and verification. Blauner (1960) concluded: "It is possible to generalize

on the basis of the evidence that the greater the degree of control that a worker has (either in a single dimension or as a total composite) the greater his job satisfaction" (p. 346). Numerous other researchers have documented this conclusion (Bachman, *et al.*, 1966; Bachman & Tannenbaum, 1966; Bowers, 1961; Ivancevich, 1970; Likert, 1961; McMahon & Ivancevich, 1976; Morse & Reimer, 1956; Patchen, 1963; Smith & Tannenbaum, 1963; Tannenbaum, *et al.*, 1974; Vroom, 1960). Indeed, the results of this study continue to confirm the control-satisfaction relationship reported in the literature.

Attitudes about the work environment were significantly ($p<.001$) associated with organizational control. Along with level in the hierarchy this dimension accounted for nearly all of the explained variance associated with organizational control. The magnitude of the relationship between these two variables increases with hierarchical ascent; which is not surprising given the prerogatives which typically accompany higher levels in the organization (*e.g.*, increased salary, status, more interesting work, autonomy).

The contribution of attitudes about the work environment at the lowest level in the organization, however, accounts for only a very meager amount of the variance associated with organizational control. Still, the findings suggest that those who do experience some degree of

control have more positive attitudes about the work environment than do those who possess little or no control at all. The causal direction in this relationship, it may be argued, implies that the exercise of different degrees of control will "determine" the degree of satisfaction with those aspects of the work setting (Bachman & Tannenbaum, 1966; Blauner, 1964; Morse & Reimer, 1956; Rosner, Kavčič, Tannenbaum, Vianello & Weisler, 1973). This view of the nature of the control-satisfaction-effectiveness relationship is also consistent with Etzioni's (1961) notion of congruent compliance systems.

A number of studies have indicated that total amount of control is related to overall organizational effectiveness; *i.e.*, performance or productivity. Various criteria have been used to determine and measure effectiveness.[4] These have included both "soft" criteria like the ratings of judges associated with the organization (Bowers, 1964; Farris & Butterfield, 1972; Tannenbaum, 1961) or judges external to the organization (Tannenbaum & Kahn, 1958), as well as "hard" criteria like sales volume (Bachman, *et al.*, 1966; Patchen, 1963), time standards records (Likert, 1961), and company performance

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[4]There is only a rudimentary understanding among social scientists as to what actually constitutes organizational effectiveness. Steers (1975) recently reviewed 17 multivariate models of organizational effectiveness and concluded that they were lacking in consensus about a valid set of evaluation criteria. Nor were they consistent in their normative or descriptive nature, their generalizability, or their derivation.

indices (Bowers, 1964; Mann & Hoffman, 1960; Morse & Reimer, 1956). Likewise, a variety of different organizational types have been studied -- labor unions, industrial/manufacturing firms, sales, service, and voluntary organizations. Despite this evidence, the proposed relationship between individual (and total) amount of organizational control and effectiveness was not found in this study. There may be several possible explanations for this result.

One reason may be that the performance ratings by the top company officials in this organization were not significantly representative of actual branch office performance. Bowers (1964), for example, found the correlation between home office rankings of branch performance and total control to be significant ($r$ = .46). However, when he factor-analyzed some 70 actual performance measures taken from company records he discovered that of the seven orthogonal factors which had emerged from the factor analysis (accounting for over 95% of the variance) only two were significantly correlated with the performance rankings of the home office officials. In turn, only two of these seven factors were significantly correlated with organizational control. And there was only *one* performance factor which significantly correlated with both the company official's ranking and organizational control. Consequently, there may be some legitimate questioning about the reliability of ratings by

company officials and some concern about what it is these officials are measuring or evaluating when they rate branch offices in terms of organizational effectiveness.

It may also be that while correlations have been found between control and effectivness which are statistically significant, they may not have been meaningfully significant. Correlations reported in the literature generally account for much less than one-fifth of the total variance which is associated with organizational effectiveness. Consequently, a number of other factors, unmeasured or unreported, may be more responsible than total amount of control for effectiveness in an organization. Previous researchers have also generally not employed methodological designs which would allow them to examine possible contingent interactions between the control variables and various independent variables. Therefore, it is likely that when not controlled for, possible interaction effects may either mask expected relationships or produce redundant and/or spurious relationships. In addition, there are at least two other studies which have reported finding no relationship between control and effectiveness (McMahon & Ivancevich, 1976, Patchen, 1963).

The control-effectiveness relationship described in the literature has typically been concerned with *total* amount of control and not the amount of control at any specific level, or differentials between levels, or with

individual-level effects. Therefore, it is conceivable that the relationship found in the present study might be due to differences in research methods. However, it should be noted that the total control concept has itself been computed differently in a number of studies (Bachman, *et al.*, 1966; Bowers, 1964; McMahon & Ivancevich, 1976; Tannenbaum, 1961; Tannenbaum & Georgopolous, 1967; Tannenbaum & Kahn, 1957). The consistency between the results of the individual control and total control analyses would argue in favor of the reliability of the former measure.

The only other study where individual-level effects were studied indicated that individual worker's productivity (dollar sales volume) was not related to their perception of control in the organization ($\underline{r} = -.07$), even though the productivity of the organizational unit (agency office) as a whole did correlate with average judgments by members of control in that unit (Bachman, *et al.*, 1966). The researchers interpreted this to mean that the relationship between organizational performance and control was a characteristic of the structure of the organizational environment and not the result of some phenomenological effect (cf. Tannenbaum & Bachman, 1964).

The fact that neither individual control nor total control were related to organizational effectiveness in the present study is an important finding which casts some doubt on the control-effectiveness relationship. It is difficult to say with much certainty whether the finding

that individual control and effectiveness were not related is important in its own right, or whether it is an artifact stemming from the nonsignificant relationship between total control and effectiveness. Both of these are important areas for future researchers to consider.

Another possibility is that the control-effectiveness relationship is moderated by some other variable(s). Organizational technology has been proposed as one of these. McMahon and Ivancevich (1976), for example, have suggested that as task characteristics become more unique or complex and as the individual's role is less specified, the organizational unit and/or level becomes more autonomous. This was the case for staff employees in the manufacturing firm they investigated and is true at higher levels in the underwriting area of the insurance business where tasks become more ill-defined and nonroutine. This degree of autonomy, they conclude: "May reduce the importance of organizational control for these individuals" (p. 81). In other words, because of their autonomy the total amount of control in the organization does not substantially affect either their functioning or performance.

The technology variable may also help to explain why organizational control was still correlated with positive attitudes about the work environment at the lowest level in the organization. The nature of their work is such that there is not much opportunity for discretion and hence a more bureaucratic distribution of

control is considered practical and legitimate. Their lack of substantive individual control may be perceived as acceptable since it adds to the consistency and clarity about what is expected of them.

Holzbach and Weinstein (1974) have also suggested that the relationship between social control and performance is moderated by situational and job-related conditions. Differences were found in this relationship in a manufacturing plant depending upon the nature of the task demands (or technology),[5] employee type (management or professional), and function (line or staff). Warren (1968) adds that consideration of control structures should involve not only the dimension of total control but also be concerned with the way(s) in which control is supported. The latter, he suggests, may condition individuals' reactions to different patterns of control. A number of social scientists have dealt with the question of what form social conformity takes in different situations (Coser, 1961; Kelman, 1959; Merton, 1959).

The control-effectiveness relationship does not appear to be a simple linear function, but one much more complex than some researchers have imagined. Future researchers would do well to direct attention at intervening variables which may moderate and shape the control-effectiveness relationship.

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[5]That is, the results varied by departments in the organization. These included: Marketing, Engineering, Manufacturing Support, Materials, and Manufacturing Operations.

In addition, while there are many provocative suggestions in the social science literature, it is not clear whether organizational control should be considered as a result (effect), or cause, of organizational effectiveness. Tannenbaum (1961) has discussed both possibilities:

That total control may be a *cause* of organizational effectiveness is based on the premise that greater control is an organization will bring about greater consensus and adherence to organizational rules and greater conformity and commitment to organizational dictates. This will lead to better coordination of individual efforts toward organizational objectives. This view holds that there is a high control syndrome which facilitates and integrates individual motivations, cooperation and efforts to further the goals of the organization. That total control may be a *result* of organizational effectiveness follows from the assumption that organizations have functions to perform and rewards to dispense. Since an effective organization is more likely to achieve its goals it will have a greater stock of disposable rewards. The latter serves to motivate members to exercise control because doing so will be instrumental in the attainment of a share of the available rewards. The motivation to exercise control, and the rewards available, will be less in ineffective organizations.

Either interpretation appears plausible; as does a third which suggests a circular relationship. While

the control structure plays some causal role with respect to organizational performance, performance also has an effect on control. The only longitudinal study of the control-effectiveness relationship points to this possibility (Yuchtman, 1968). Farris (1969) in specific reference to the Tannenbaum literature on organizational influence calls to task the assumption that influence causes performance. Such a conclusion, he suggests, is not only "unsupported" but "the more parsimonious causal interpretation is that performance causes influence" (p. 92). Further clarification and understanding about how this relationship works is of crucial importance; particularly in light of evidence here and elsewhere (McMahon & Ivancevich, 1976) about the lack of a significant relationship between organizational control and effectiveness.

An additional explanation for the mixed findings about the control-effectiveness relationship has to do with the way organizational control is measured. This possibility is considered in the next section.

Finally, a comment or two about the reliability of this study is in order. The scale measures were constructed and hypothesized dimensions of organizational control were first tested, it will be recalled, using a randomly selected portion (one-half) of the total sample (Sample A). The results from the second half of the sample (Sample B) essentially replicated those obtained

in Sample A. In addition, the discriminant function derived using Sample B was able to correctly identify over two-thirds ($p<.001$) of the individuals in Sample A. Both of these efforts indicate a considerable degree of reliability -- in terms of stability, dependability, and predictability (Kerlinger, 1964) -- for both the measures and the findings. As for external validity, on the one hand, it may be suspect since this study included only one kind of organization (insurance company) and a non-random sample of individuals from this organization. On the other hand, this type of organization has been the basis for several other published studies regarding the characteristics of control in organizations (Bowers, 1964; Ivancevich, 1970; Morse & Reimer, 1956).

## THE MEASUREMENT OF CONTROL IN ORGANIZATIONS: SOME ALTERNATIVES

It will be recalled that in this study the concept of organizational control has been operationalized by considering perceptions of individuals' own control within the organization. This is a departure from Tannenbaum and others' use of the control graph methodology to refer to the total amount of control at all levels in the organization. It remains to be seen from future empirical research just how valid this measure of individuals' organizational control is and to what degree the hypotheses, when tested under varying organizational conditions, will be supported.

In Chapter Two the difficult problems researchers have had in measuring the control structures of organizations was discussed. At that time we concluded that the total control concept was one of the best studied and most reliable of the alternatives. The results of this study, especially those between control and effectiveness, have caused us to reconsider somewhat this conclusion. In this section, therefore, we offer several other viewpoints regarding the measurement and meaning of organizational control in the form of possible future alternatives to the total control concept.

McMahon and Ivancevich (1976) have proposed that rather than total control, the degree of agreement (concordance) among members of different hierarchical levels on the amount and distribution of control within the organization would be a more appropriate measure of the organization's control structure. Corcordance, they suggest, is related to "system solidarity and predictability" and the lack of substantial concordance about the organization's control structure will "adversely affect the process of communication, coordination, and integration" (p. 68). Their findings strongly indicated that, in comparison, "the independent variable of total control is the least important correlate, and a high degree of concordance in the management system is the most important correlate of line and staff employee performance and satisfaction" (p. 82).

Smith and Tannenbaum (1963) have also reported that the extent of member-officer agreement with respect to the amount of total control in the organization was significantly ($p<.05$) correlated with effectiveness in a nationally organized delivery service company and in four union locals and approached statistical significance ($p<.10$) in a large nationwide voluntary organization and automotive sales organization. There is, of course, a need to further validate the concordance variable but preliminary evidence suggests that it "may offer prediction over and above that resulting from the use of total control alone" (McMahon & Perritt, 1971, p. 340).

Another concept which has been proposed for studying the relationships associated with the organization's control structure is that of task-relevant control. Farris and Butterfield (1972) found that although total control was related to organizational effectiveness, the latter was "especially related to the control exerted by the party most responsible in a particular phase of decision-making -- department heads in determining methods, technical personnel in evaluation, and top management in approval" (p. 582). Bowers (1964) also found that measures of organizational performance were differentially associated with the control attributed by agents to various hierarchical levels in the organization.

Such findings, Farris and Butterfield suggest, provide a coherent explanation for the control-effectiveness

relationship; *i.e.*, an organization is effective when its members have the necessary competence demanded by the nature of the task and also have the control (authority or influence) to successfully perform that task. This implies consequently, a task-relevant distribution of organizational control. This view is also congruent with the perspective of technology as a moderating variable.

It has been pointed out that organizational participants typically view the control process in predominantly pragmatic terms (Patchen, 1974; Tannenbaum, 1956). This implies the existence of a task or issue-relevant distribution of *interest* in organizational control to begin with. Wood (1972b) has suggested further that different phases of the decision process may offer differential opportunities for the fulfillment of individual needs and motives. Studies of small groups have also indicated that the nature of the task and composition of the group may moderate individual perceptions of control (London, 1975; Steiner, 1972; Wood, 1972a).

It is interesting to note that in some of the earliest studies of organizational control a classification of the control process into three phases was made: legislative, administrative, and sanctions (Morse, *et al.*, 1951; Tannenbaum, 1956a; Tannenbaum & Kahn, 1958). These researchers suggested that the "same persons need not be involved equally in all three phases. . . .[and that] in large organizations specialization among the phases of control is necessary" (Tannenbaum, 1956b; p. 307). Yet,

the observation that individuals might be differentially involved in various phases of the control process and the implications this has for matching the distribution of control with task competency has, until only recently, been ignored in favor of the total amount of control concept.

This neglect is especially disheartening in light of the research which has indicated that judgments on *specific* control areas provide a more reliable measure of the organizational control structure than do global-type questions (Patchen, 1963). This is likely to be even more true in situations where the degree of routinization or programming of the organizational task is low (Whisler, *et al.*, 1967).

All of this evidence suggests that the task-relevant distribution of control concept may be more meaningful than the total control concept. For one thing, it seems to include, at least implicitly, consideration of a number of contingent factors which may influence the control-effectiveness relationship. Future control studies should make use of the additional insights which this conceptualization may have to offer.

Finally, it is also possible to argue seriously that there really is no such thing as control in organizations for individual participants. The issue is complex. Briefly, proponents of this view contend that organizations control their members through effective

indoctrination and socialization processes--providing conditions whereby members within an organization internalize norms and recognize, accept, and value the legitimacy of the organization's control process to such a degree that they are hardly aware of the extent of control over them that exists or the ways in which it is exercised over them by the organization. Consequently, while individuals may differ in their perceptions of amount of organizational control it is unimportant because, in reality, they never had any real control to start with.[6] Certainly this view is provocative and it raises a number of ethical considerations. At a minimum, this aspect of "control" in organizations warrants further empirical investigation.

The next section discusses the limitations of this study and offers suggestions as to areas for future research and theory.

## LIMITATIONS OF THE STUDY AND AREAS FOR FUTURE RESEARCH

While the data of this study have been taken as support of the original hypotheses, several limitations of design must be borne in mind. The results are based

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[6]Culbert (1974) has articulated this perspective and contended that, as the title to the opening chapter of his work suggests: "We've Lost Control and Hardly Know It." Tannenbaum and others (Smith & Ari, 1964; Tannenbaum, 1962; Tannenbaum & Kahn, 1957) have pointed out the paradoxes or "Catch-22" nature of organizational control: "While he controls more, he is not controlled less. The loyalty and identification which he feels for the organization lead him to accept organizational requirements and to conform to organizational norms which he might not otherwise do" (Tannenbaum, 1962, pp. 256-7).

on a correlational statistical analysis which makes inferences of a causal nature inappropriate. The concepts were operationalized with "make-do" measures of the variables, and their reliability was not as high as might be hoped. In addition, only one type of organization was studied and the respondents did not constitute a random sample of employees even from this organization. The results of this study, therefore, should be treated with some caution given the magnitude of the correlations, the low-to-moderate amount of explained variance, and the uncertain representativeness and generalizability of the research sample. This admonition is, of course, often the case with static research and correlational studies, when large samples are studied, and when many non-measured factors may affect the relationships.

There is a need, consequently, for further methodological refinement, not only of the independent measures but also of the concept of organizational control itself. Additional testing of the hypotheses and interpretations of this study both in similar and distinctly different organizational settings is necessary if control and its impact on the organization and its members are to be better understood.

Future researchers may want to use multiple measures of the organization's control structure, since there continues to be some question as to the reliability of the total control conceptualization. Indeed, secondary analyses

of the present data could be performed using the degree of concordance concept and/or the task-relevant distribution of organizational control concept.[7] Also, the question of individuals' control might be investigated in combination with other research strategies. These include more qualitative research methodologies such as intensive interviewing, participant observation, and case studies.

Some attention might be directed toward the relative, or reciprocal, distribution of control. For instance, Bachman, *et al.*, (1966) reported that the control exercised by the manager over subordinates was positively related to the degree of control they exercised over the manager. Alutto and Arito (1974) have similarly indicated that the discrepancy between actual and preferred rates of participation and control is associated with individual satisfaction, and other work-related variables. Likewise, it is conceivable that the meaning of control might be quite different in an organization where the total amount of control is high and where it is low, or where control is viewed as a fixed-sum quantity and where it is viewed as an expandable quantity (Tannenbaum, *et al.*, 1974).

Tannenbaum (1961) has pointed out that a pattern of high total control may depend upon the bases of power

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[7]Figure III-A revealed a relatively high degree of concordance (agreement) among hierarchical levels' perceptions of organizational control. A variation of the task-relevant distribution of control concept was included in the work environment measure.

and attitudes of members toward each other. However, correlations found between bases of power and total amount of control have generally not been entirely consistent in either direction or magnitude (Bachman, Bowers, & Marcus, 1968). Also research in this area has generally considered bases of control over subordinates but little research has been done on the bases of control over organizational decisions (Patchen, 1974). Indeed, consistent with a contingency or situational viewpoint, Ouchi and Maguire (1975) and others (Perrow, 1969; Thompson, 1967) have contended that there are different types of control, or control processes, used in organizations which vary with, among other things, hierarchical level and task demands. Likewise, notes Warren (1968), the conditions of the exercise of control are inextricable components of the control itself.

Rosner, *et al.*, (1973) have suggested that one basis for the influence of managers in high total control organizations is that the workers, who also have high influence, have correspondingly strong feelings of responsibility and trust. It is difficult, however, to determine which is the cause and which is the effect in this relationship. Moreover, additional evidence needs to be generated regarding whether or not individuals gain any absolute increase in control when the relative distribution remains the same, and how this might affect the control-effectiveness relationship. In this respect, it would be informative to know more about why employees in high total control organizations typically prefer to

maintain power (control) differences, while their counterparts in low control organizations prefer greater power equalization (Likert, 1961; Smith & Tannenbaum, 1963; Tannenbaum & Kahn, 1957). Equally interesting is the question of how professional orientations, like Gouldner's (1957) distinction between "cosmopolitans" and "locals," might affect the impact of organizational control. For example, several studies (Filley & Grimes, 1967; Warren, 1968) have observed that professionals are more autonomous from the organization and that this does tend to affect their relationship with the organizational control structure.

Learning more about how control is exercised, both organizationally and interpersonally, may go a long way toward explaining why or how control might be related to organizational effectiveness. In fact, research studies which allow for causal interpretations of control in organizations are sorely needed. Farris (1975), for instance, has argued that effectiveness should be conceptualized and studied as the independent, not dependent, variable in organizational research. In his studies performance has been found to cause influence, while the converse has not been true (Farris, 1969; Farris & Lim, 1969).

Another fruitful area for research on organizational control would be in identifying and specifying the contingencies which may be associated with the development and exercise of control. Technology, professionalism, degree

of bureaucratization, hierarchical level, and locus of control are some which have already been identified as possible moderating or situational variables. The importance of knowing more about these contingent variables is underscored by Etzioni's (1961) observations that some control systems are incompatible with certain environmental/situational factors.

Finally, it would be premature to abandon completely (or, for that matter, accept completely) the theoretical framework of individuals' control in organizations advanced in this study (see Figure 2.1) based upon the results of a single research effort. Given the limitations of the study, the model was all-in-all relatively successful and does represent a significant first effort. It is possible that more valid measures of the model's dimensions will yield stronger relationships. There are, however, undoubtedly other personal and situational characteristics which might be important in understanding the meaning individuals attach to control in organizations. Some of these include: task complexity, leadership styles, communication networks, mechanisms of integration and differentiation, sources of social control, interpersonal relationships, social values, interdependencies and boundary-spanning, organizational size, commitment and level of effort, task-goal attributes, or organizational reward structures.

## A CONCLUDING NOTE

The results of this study, on one hand, may be disappointing since the proposed model of individuals' characteristics of organizational control failed to account for more than 30% of the total variance. Moreover, of this variance, most was explained by level in the organization, more or less independent of five other social psychological dimensions. It is difficult, thus, to ascertain whether the results should be interpreted as saying something about the meaning of organizational control or whether they can simply be explained as a further description of one of the "known facts" associated with the role of the hierarchy in organizations. Of course, with survey data an inability to more than "suggest" causal relationships is commonplace.

On the other hand, the study does shed some light, however tentative, upon what control means, and does not mean, to individuals within organizations. For example, we can be somewhat confident that control is an organizational prerogative which is differentially distributed by levels in the organization. Having control also seems to be personally more valued by some than by others, regardless of organizational level, just as being controlled is more frustrating personally for some than for others. Individuals seem more content with their lot in the organization, regardless of level, when the organization appears to be meeting their personal needs, when their work is

satisfying, and when the organization affords them, at least, the control necessary to be successful at their tasks. Finally, for one reason or another (*e.g.*, because they are irrelevant or perhaps intercorrelated with level or satisfaction), attitudes about one's supervisor, one's location in the decision-making network and the clarity of one's role requirements do not appear to aid much in understanding why individuals feel they have organizational control.

This study has taken several necessary and important first steps in attempting to examine and specify some of the essential contextual features of organizational control. Future research in this area should continue to focus on the objective and behavioral correlates -- the characteristics of the organization, the task, and the individual -- which will facilitate a greater understanding of the meaning and significance of control in organizations.

# A P P E N D I X  I

## QUESTIONNAIRE ITEMS INCLUDED IN MEASURES OF INDEPENDENT VARIABLES*



*NOTE: Questionnaire items which were included in the final scale measures appear first and are identified by number. The remaining questionnaire items were subsequently dropped in the process of scale construction due to statistical and theoretical considerations. "R" indicates reverse scoring.

Table I-A

Questionnaire Items for BELIEF IN PERSONAL CONTROL Scale

The fact that my superior reviews a sample of my decisions makes me: (Check one answer for each line)

| | Strongly Agree (1) | Agree (2) | No Opinion (3) | Disagree (4) | Strongly Disagree (5) |
|---|---|---|---|---|---|
| PC-1 More careful | _____ | _____ | _____ | _____ | _____ |
| PC-2 More likely to follow the Underwriting manual | _____ | _____ | _____ | _____ | _____ |
| PC-3 Less willing to accept marginal risks | _____ | _____ | _____ | _____ | _____ |

To what extent does your supervisor engage in the following activities in regard to your making or approving underwriting decisions?

| | Very Frequently (1) | Frequently (2) | Occasionally (3) | Infrequently (4) | Very Infrequently (5) |
|---|---|---|---|---|---|
| PC-4R Leaving me alone to do my work | _____ | _____ | _____ | _____ | _____ |

Please indicate the relative helpfulness of each of the following activities of your superior as you make or approve underwriting decisions.

| | Extremely Helpful (1) | Very Helpful (2) | Helpful (3) | Not Very Helpful (4) | Not at all Helpful (5) |
|---|---|---|---|---|---|
| PC-5R Leaving me alone to do my work | _____ | _____ | _____ | _____ | _____ |

PC-6 SEEK HELP FROM PEERS was formed from the following question, using appropriate level.

How often do you seek help from the following persons:

| | Very Often (1) | Often (2) | Occasionally (3) | Seldom (4) | Almost Never (5) |
|---|---|---|---|---|---|
| a. Another underwriter | _____ | _____ | _____ | _____ | _____ |
| b. Supervising Underwriter | _____ | _____ | _____ | _____ | _____ |
| c. Underwriting Manager | _____ | _____ | _____ | _____ | _____ |
| d. General Manager | _____ | _____ | _____ | _____ | _____ |

PC-7 SEEK HELP FROM SUPERVISOR was formed from the above question, using appropriate level.

PC-8 IMPORTANCE OF SUPERVISOR'S ACTIVITIES was formed from a linear combination of the following question:

In getting your work done how important are each of the following activities of your superior?

| | Extremely Important (1) | Very Important (2) | Important (3) | Un-Important (4) | Not at all Important (5) |
|---|---|---|---|---|---|
| Planning the work that I do | _____ | _____ | _____ | _____ | _____ |
| Supervising the work that I do | _____ | _____ | _____ | _____ | _____ |
| Evaluating the work that I do | _____ | _____ | _____ | _____ | _____ |

If my superior and I disagree about underwriting a risk, I feel free to appeal to higher authority. CHECK ONE:

_____(1) Strongly Agree
_____(2) Agree
_____(3) Don't know
_____(4) Disagree
_____(5) Strongly Disagree

R As long as you have competent people, the organization structure doesn't matter. CHECK ONE:

_____(1) Strongly Agree
_____(2) Agree
_____(3) Don't know
_____(4) Disagree
_____(5) Strongly Disagree

R A person who has demonstrated effective leadership in one situation can be an effective leader in any situation. CHECK ONE:

_____(1) Strongly Agree
_____(2) Agree
_____(3) Don't know
_____(4) Disagree
_____(5) Strongly Disagree

Groups always make better decisions than individuals. CHECK ONE:

_____(1) Strongly Agree
_____(2) Agree
_____(3) Don't know
_____(4) Disagree
_____(5) Strongly Disagree

R When a superior delegates authority to a subordinate to carry out a task, the subordinate assumes sole responsibility in the organization for that task. CHECK ONE:

_____(1) Strongly Agree
_____(2) Agree
_____(3) Don't know
_____(4) Disagree
_____(5) Strongly Disagree

R A superior should treat all of his subordinates in the same way. CHECK ONE:

_____(1) Strongly Agree
_____(2) Agree
_____(3) Don't know
_____(4) Disagree
_____(5) Strongly Disagree

Please indicate how helpful the following factors are in providing information for decision making.

| | Extremely Helpful (1) | Very Helpful (2) | Adequate (3) | Somewhat Helpful (4) | Not at all Helpful (5) |
|---|---|---|---|---|---|
| My personal experience and judgment | _____ | _____ | _____ | _____ | _____ |

R My willingness to assume risk has increased with experience. CHECK ONE:

_____(1) Strongly Agree
_____(2) Agree
_____(3) No change
_____(4) Disagree
_____(5) Strongly Disagree

R If my superior disagrees with me or overrides one of my decisions, it is because he feels he has superior technical knowledge. CHECK ONE:

_____(1) Strongly Agree
_____(2) Agree
_____(3) Don't know
_____(4) Disagree
_____(5) Strongly Disagree

In getting your work done how important are each of the following activities of your superior?

| | Extremely Important (1) | Very Important (2) | Important (3) | Un-Important (4) | Not at all Important (5) |
|---|---|---|---|---|---|
| Planning the work that I do | _____ | _____ | _____ | _____ | _____ |
| Supervising the work that I do | _____ | _____ | _____ | _____ | _____ |
| Evaluating the work that I do | _____ | _____ | _____ | _____ | _____ |

How often do you seek help from the following persons?

| | Very Often (1) | Often (2) | Occasionally (3) | Seldom (4) | Almost Never (5) |
|---|---|---|---|---|---|
| Another underwriter | _____ | _____ | _____ | _____ | _____ |
| Supervising Underwriter | _____ | _____ | _____ | _____ | _____ |
| Underwriting Manager | _____ | _____ | _____ | _____ | _____ |
| General Manager | _____ | _____ | _____ | _____ | _____ |

## Table I-B

### Questionnaire Items for ATTITUDES ABOUT THE WORK ENVIRONMENT Scale

WE-1 How good a job has the company done at meeting your needs--for example, interesting work, adequate pay, a chance to use or develop your talents, or whatever it is that you want from your job? CHECK ONE:

_____(1) The company has not done a good job at all at meeting my needs
_____(2) Not too good a job
_____(3) A fair job
_____(4) A very good job
_____(5) The company has done an excellent job at meeting my needs

WE-2 Generally, how would you classify your company as an organization to work for, in comparison with other business organizations? CHECK ONE:

_____(1) Much below average
_____(2) Below average
_____(3) Average
_____(4) Above average
_____(5) One of the best organizations I know

WE-3 All in all, how satisfied are you with your present job? CHECK ONE:

_____(1) Very dissatisfied
_____(2) Fairly dissatisfied
_____(3) Neither satisfied nor dissatisfied
_____(4) Fairly satisfied
_____(5) Very satisfied

Below we are listing several types of opportunities that a job could offer. Up to what point does your present job really offer an opportunity to realize each one of these possibilities? (CIRCLE one number in each line)

| | Very Little | Little | So-so | Much | Very Much |
|---|---|---|---|---|---|
| WE-4 To make good use of my present knowledge & skills | 1 | 2 | 3 | 4 | 5 |
| WE-5 To develop and learn new concepts and skills | 1 | 2 | 3 | 4 | 5 |
| WE-6 To work on difficult and stimulating problems | 1 | 2 | 3 | 4 | 5 |
| WE-7 To have the freedom to put in practice my own ideas | 1 | 2 | 3 | 4 | 5 |

Please indicate how helpful the following factors are in providing information for decision making.

| | Extremely Helpful (1) | Helpful (2) | Adequate (3) | Somewhat Helpful (4) | Not at all Helpful (5) |
|---|---|---|---|---|---|
| WE-8R My personal experience and judgment | _____ | _____ | _____ | _____ | _____ |

WE-9 TASK-RELEVANT CONTROL POSSESSED was formed from a linear combination of the following items:

How much influence do the following people and groups have in actually making underwriting decisions? (CIRCLE one number in each line)

| | Little or no Influence | Some | Mod-erate | Sub-stantial | Very Great Influence |
|---|---|---|---|---|---|
| a. Underwriter | 1 | 2 | 3 | 4 | 5 |

How much influence do the following people and groups have in approving underwriting decisions? (CIRCLE one number in each line)

| | Little or no Influence | Some | Mod-erate | Sub-stantial | Very Great Influence |
|---|---|---|---|---|---|
| b. Underwriting Manager | 1 | 2 | 3 | 4 | 5 |
| c. Supervising Underwriter | 1 | 2 | 3 | 4 | 5 |

PERSONAL JUDGMENT AND EXPERTISE I was formed from a linear combination, held constant by level, of the following question:

Estimate the percentage of your decisions or recommendations that have been considered incorrect by higher authority in the past six (6) months. (Check a percentage for each authority level that is applicable)

| | 0 (1) | 1-5% (2) | 6-10% (3) | 11-15% (4) | Over 15% (5) |
|---|---|---|---|---|---|
| R Supervising Underwriter | _____ | _____ | _____ | _____ | _____ |
| R Underwriting Manager | _____ | _____ | _____ | _____ | _____ |
| R General Manager | _____ | _____ | _____ | _____ | _____ |

PERSONAL JUDGMENT AND EXPERTISE II was formed from a linear combination, held constant by level, of the following question:

Estimate the percentage of your decisions or recommendations that have been actually reversed by higher authority in the past six (6) months. (Check a percentage for each authority level that is applicable)

| | 0 (1) | 1-5% (2) | 6-10% (3) | 11-15% (4) | Over 15% (5) |
|---|---|---|---|---|---|
| R Supervising Underwriter | _____ | _____ | _____ | _____ | _____ |
| R Underwriting Manager | _____ | _____ | _____ | _____ | _____ |
| R General Manager | _____ | _____ | _____ | _____ | _____ |

PERSONAL JUDGMENT AND EXPERTISE III was formed from a linear combination, held constant by level, of the above two general questions.

How successful has the company been in getting you to meet its needs--for example, getting you to produce what they want, when they want it, in the manner they want? CHECK ONE:

_____(1) They have not been successful at all at getting me to meet the company's needs
_____(2) Not too successful
_____(3) Somewhat successful
_____(4) Fairly successful
_____(5) They have been very successful at getting me to meet the company's needs

There are people who are totally involved in their work, thinking about it day and night. For others, work is only one of several important interests. How involved are you in your work? CIRCLE ONE:

_____(1) A little
_____(2) So-so
_____(3) Much
_____(4) Very much
_____(5) Completely

## Table I-C

## Questionnaire Items for ATTITUDES ABOUT THE SUPERVISOR Scale

Please indicate how helpful the following factors are in providing information for decision making.

| | Extremely Helpful (1) | Very Helpful (2) | Adequate (3) | Somewhat Helpful (4) | Not at all Helpful (5) |
|---|---|---|---|---|---|
| S-1R My superior | _____ | _____ | _____ | _____ | _____ |

Please indicate the relative helpfulness of each of the following activities of your superior as you make or approve underwriting decisions.

| | Extremely Helpful (1) | Very Helpful (2) | Adequate (3) | Somewhat Helpful (4) | Not at all Helpful (5) |
|---|---|---|---|---|---|
| S-2R Providing assistance when requested | _____ | _____ | _____ | _____ | _____ |

S-3 How well does your supervisor handle the <u>technical side</u> of the job--for example, general expertness, knowledge of job, technical skills needed, etc.? CHECK ONE:

_____(1) Does not handle the technical side of job at all well
_____(2) Not so well
_____(3) Fairly well
_____(4) Very well
_____(5) Handles the technical side of job extremely well

S-4 How well does your supervisor handle the <u>human relations</u> side of the job--for example, getting people to work well together, getting individuals to do the best they can, giving recognition for good work done, letting people know where they stand, etc.? CHECK ONE:

_____(1) Does not handle the human relations side of job at all well
_____(2) Not so well
_____(3) Fairly well
_____(4) Very well
_____(5) Handles the human relations side of the job extremely well

S-5 How well does your supervisor handle the administrative side of the job--for example, planning and scheduling the work, indicating clearly when work is to be finished, assigning the right job to the right person, etc.? CHECK ONE:

_____(1) Does not handle the administrative side of the job at all well
_____(2) Not so well
_____(3) Fairly well
_____(4) Very well
_____(5) Handles the administrative side of the job extremely well

S-6 How well does your supervisor handle the institutional leadership side of the job--for example, creating and formulating policy; handling matters of the company's relationships to outside organizations, agencies, and groups; understanding the importance and relationships of the company's mission in the political, social, and economic environment? CHECK ONE:

_____(1) Does not handle the institutional leadership side of job at all well
_____(2) Not so well
_____(3) Fairly well
_____(4) Very well
_____(5) Handles the institutional leadership side of the job extremely well

S-7 All in all, how effective a job do you think your supervisor is doing? CHECK ONE:

_____(1) A rather poor job
_____(2) A fair job
_____(3) A good job
_____(4) A very good job
_____(5) An excellent job

IMPORTANCE OF SUPERVISOR'S ACTIVITIES was formed from a linear combination of the following question:

In getting your work done how important are each of the following activities of your superior?

| | Extremely Important (1) | Very Important (2) | Important (3) | Un-Important (4) | Not at all Important (5) |
|---|---|---|---|---|---|
| R Planning the work that I do | _____ | _____ | _____ | _____ | _____ |
| R Supervising the work that I do | _____ | _____ | _____ | _____ | _____ |
| R Evaluating the work that I do | _____ | _____ | _____ | _____ | _____ |

Please rate in importance the following reasons why you refer recommendations to your superior.

| | Extremely Important (1) | Very Important (2) | Important (3) | Slightly Important (4) | Unim-Important (5) |
|---|---|---|---|---|---|
| R He is more experienced | _____ | _____ | _____ | _____ | _____ |

Please indicate the relative helpfulness of each of the following activities of your superior as you make or approve underwriting decisions.

| | Extremely Helpful (1) | Very Helpful (2) | Helpful (3) | Not very Helpful (4) | Not at all Helpful (5) |
|---|---|---|---|---|---|
| R Holding staff conferences | _____ | _____ | _____ | _____ | _____ |
| R Giving special instructions whenever he thinks he should | _____ | _____ | _____ | _____ | _____ |
| R Supporting my recommendations on referrals to higher authority including the Home Office | _____ | _____ | _____ | _____ | _____ |

R In carrying out the basic tasks of your job, does your superior supervise you closely or are you on your own? CHECK ONE:

_____(1) I am definitely on my own
_____(2) I am pretty much on my own
_____(3) Superior uses a moderate amount of supervision
_____(4) Superior uses fairly close supervision
_____(5) Superior uses very close supervision; doesn't put me on my own

R If my superior disagrees with me or overrides one of my decisions, it is because he feels he has a better understanding of what higher authority deems acceptable. CHECK ONE:

_____(1) Strongly Agree
_____(2) Agree
_____(3) Don't know
_____(4) Disagree
_____(5) Strongly Disagree

R How often does your superior belittle you, or act sarcastically toward you? CHECK ONE:

_____(1) Never belittles me
_____(2) Seldom
_____(3) Occasionally
_____(4) Frequently
_____(5) Very frequently belittles me

| | | Strongly Agree (1) | Agree (2) | Don't Know (3) | Disagree (4) | Strongly Disagree (5) |
|---|---|---|---|---|---|---|
| R | My day-to-day relationships with my superiors provide me with very valuable information which helps me improve my work. CHECK ONE: | _____ | _____ | _____ | _____ | _____ |

To what extent does your supervisor engage in the following activities in regard to your making or approving underwriting decisions?

| | | Very Frequently (1) | Frequently (2) | Occa-sionally (3) | Infre-quently (4) | Very Infre-quently (5) |
|---|---|---|---|---|---|---|
| R | Providing assistance when requested | _____ | _____ | _____ | _____ | _____ |
| R | Holding staff conferences | _____ | _____ | _____ | _____ | _____ |
| R | Giving special instructions whenever he thinks he should | _____ | _____ | _____ | _____ | _____ |
| R | Supporting my recommendations on referrals to higher authority including the Home Office | _____ | _____ | _____ | _____ | _____ |

## Table I-D

### Questionnaire Items for ATTITUDES ABOUT LOCATION IN THE DECISION-MAKING NETWORK Scale

L-1R To what extent does your supervisor engage in the following activities in regard to your making or approving underwriting decisions?

| | Very Frequently (1) | Frequently (2) | Occasionally (3) | Infrequently (4) | Very Infrequently (5) |
|---|---|---|---|---|---|
| Supporting my recommendations on referrals to higher authority including the Home Office | _____ | _____ | _____ | _____ | _____ |

L-2R Please indicate the relative helpfulness of each of the following activities of your superior as you make or approve underwriting decisions.

| | Extremely Helpful (1) | Very Helpful (2) | Helpful (3) | Not very Helpful (4) | Not at all Helpful (5) |
|---|---|---|---|---|---|
| Supporting my recommendations on referrals to higher authority including the Home Office | _____ | _____ | _____ | _____ | _____ |

| | | Strongly Agree (1) | Agree (2) | Don't Know (3) | Disagree (4) | Strongly Disagree (5) |
|---|---|---|---|---|---|---|
| L-3R | Communications to me from the Home or Departmental Office give me a very good idea of how well I am doing | _____ | _____ | _____ | _____ | _____ |

L-4 How easy is it for you to communicate your needs and problems related to your work up to the people in the Home or Departmental Office of the company? CHECK ONE:

_____(1) It is not at all easy to communicate my work needs and problems up to the Home or Departmental Office
_____(2) Not too easy
_____(3) Somewhat easy
_____(4) Fairly easy
_____(5) It is very easy to communicate my work needs and problems up to the Home or Departmental Office

L-5 To what extent do you understand the viewpoints, needs, and problems of the people in the Home or Departmental Office of the company? CHECK ONE:

_____(1) To a very small extent, I understand the views and problems of the Home or Departmental Office
_____(2) To a small extent
_____(3) To some extent
_____(4) To a considerable extent
_____(5) I understand the views and problems of the people in the Home or Departmental Office to a very great extent

L-6R My willingness to assume risk has increased with experience. CHECK ONE:

_____(1) Strongly Agree
_____(2) Agree
_____(3) No difference
_____(4) Disagree
_____(5) Strongly Disagree

L-7 There are people who are totally involved in their work, thinking about it day and night. For others, work is only one of several important interests. How involved are you in your work? CHECK ONE:

_____(1) A little
_____(2) So-so
_____(3) Much
_____(4) Very much
_____(5) Completely

L-8 What year did you start working for the company? CHECK ONE:

_____(1) 1973
_____(2) 1972
_____(3) 1971
_____(4) 1970
_____(5) 1969
_____(6) 1968-1963
_____(7) 1962-1957
_____(8) 1956-1951
_____(9) Before 1951

R If my superior disagrees with me or overrides one of my decisions, it is because he feels he has a better understanding of what higher authority deems acceptable. CHECK ONE:

_____(1) Strongly Agree
_____(2) Agree
_____(3) Don't know
_____(4) Disagree
_____(5) Strongly Disagree

R If my superior and I disagree about underwriting a risk, I feel free to appeal to higher authority. CHECK ONE:

_____(1) Strongly Agree
_____(2) Agree
_____(3) Don't know
_____(4) Disagree
_____(5) Strongly Disagree

R Before receiving a final rating on my performance appraisal, my opinions and explanations of my work are always given full and fair consideration. CHECK ONE:

_____(1) Strongly Agree
_____(2) Agree
_____(3) Don't know
_____(4) Disagree
_____(5) Strongly Disagree

## Table I-E

## Questionnaire Items for CLARITY OF ROLE REQUIREMENTS Scale

R-1R Changes in underwriting decision rules are announced immediately and explained thoroughly. CHECK ONE:

_____(1) Strongly Agree
_____(2) Agree
_____(3) No Opinion
_____(4) Disagree
_____(5) Strongly Disagree

R-2R How clearly defined are the policies and the various rules and regulations of the company that affect your job? CHECK ONE:

_____(1) They are defined as clearly as they should be defined
_____(2) They are defined almost as clearly as they should be defined
_____(3) They should be defined somewhat more clearly
_____(4) They should be defined more clearly
_____(5) They should be defined much more clearly

R-3 To what extent are the people in the Home or Departmental Office of the company fair and reasonable in their decisions that affect your work, regardless of whether those decisions are favorable to you or not? CHECK ONE:

_____(1) They are extremely fair and reasonable
_____(2) They are very fair and reasonable
_____(3) They are somewhat fair and reasonable
_____(4) They are not too fair and reasonable
_____(5) They are not at all fair and reasonable

R-4R Please rate the following statement about the evaluation of your performance and progress.

Appraisals of my work are based on previously-agreed-upon standards of performance. CHECK ONE:

_____(1) Strongly Agree
_____(2) Agree
_____(3) Don't know
_____(4) Disagree
_____(5) Strongly Disagree

R-5 Below we are listing several types of opportunities that a job could offer. Up to what point does your present job really offer an opportunity to realize each one of these possibilities? (CIRCLE one number in each line)

| | Very Little | Little | So-so | Much | Very Much |
|---|---|---|---|---|---|
| To have well-defined work objectives | 1 | 2 | 3 | 4 | 5 |

R-6R In carrying out the basic tasks of your job, does your superior supervise you closely or are you on your own? CHECK ONE:

_____(1) I am definitely on my own
_____(2) I am pretty much on my own
_____(3) Superior uses a moderate amount of supervision
_____(4) Superior uses fairly close supervision
_____(5) Superior uses very close supervision; doesn't put me on my own

How closely do the people in the Home or Departmental Office of the company follow the policies (which they establish) that affect your work as well as theirs? CHECK ONE:

_____(1) They don't follow them at all
_____(2) They don't follow them too closely
_____(3) They follow them fairly closely
_____(4) They follow them very closely
_____(5) They follow their own policies extremely closely

R The amount of authority I have to underwrite or approve risks is just right for a person of my experience and ability. CHECK ONE:

_____(1) Strongly Agree
_____(2) Agree
_____(3) Don't know
_____(4) Disagree
_____(5) Strongly Disagree

Variations from decision guidelines are made too frequently at all levels of the Regional Office and the Home or Departmental Office. CHECK ONE:

_____(1) Strongly Agree
_____(2) Agree
_____(3) No Opinion
_____(4) Disagree
_____(5) Strongly Disagree

Short term changes in decision rules are often made to help fulfill the business plan rather than to improve the quality of underwriting decisions. CHECK ONE:

_____(1) Strongly Agree
_____(2) Agree
_____(3) No Opinion
_____(4) Disagree
_____(5) Strongly Disagree

R The Home or Departmental Office Audit of the operations of our Regional Office is an accurate indicator of our performance. CHECK ONE:

_____(1) Strongly Agree
_____(2) Agree
_____(3) Don't know
_____(4) Disagree
_____(5) Strongly Disagree

A superior should treat all of his subordinates in the same way. CHECK ONE:

_____(1) Strongly Agree
_____(2) Agree
_____(3) Don't know
_____(4) Disagree
_____(5) Strongly Disagree

Below we are listing several types of opportunities that a job could offer. Up to what point does your present job really offer an opportunity to realize each one of these possibilities? (CIRCLE one number in each line)

| | Very Little | Little | So-so | Much | Very Much |
|---|---|---|---|---|---|
| To have the freedom to put in practice my own ideas | 1 | 2 | 3 | 4 | 5 |

R Technical knowledge is an adequate basis for managerial decisions. CHECK ONE:

_____(1) Strongly Agree
_____(2) Agree
_____(3) Don't know
_____(4) Disagree
_____(5) Strongly Disagree

In getting your work done how important are each of the following activities of your superior?

| | Extremely Important (1) | Very Important (2) | Important (3) | Un-Important (4) | Not at all Important (5) |
|---|---|---|---|---|---|
| Planning the work that I do | _____ | _____ | _____ | _____ | _____ |
| Supervising the work that I do | _____ | _____ | _____ | _____ | _____ |
| Evaluating the work that I do | _____ | _____ | _____ | _____ | _____ |

# A P P E N D I X  I I

## FACTOR PATTERN COEFFICIENTS OF FACTORS INCLUDED IN MEASURES OF INDEPENDENT VARIABLES

Table II-A

Factor Loadings for Belief in Personal Control Scale

| | Factor Loadings[a] |
|---|---|
| FACTOR 1: Confidence in Personal Decision-Making and Judgment | |
| Question PC-1[b] | .68 |
| Question PC-2 | .77 |
| Question PC-3 | .56 |
| FACTOR 2: Desire to Work Alone | |
| Question PC-4 | .67 |
| Question PC-5 | .73 |
| FACTOR 3: Independence from Others | |
| Question PC-6 | .45 |
| Question PC-7 | .61 |
| Question PC-8 | .41 |

---

[a]These numbers represent the coefficients from the factor pattern matrix after the final factor analysis of the separate scales.

[b]The actual questions asked can be found in Appendix I, Table I-A.

Table II-B

Factor Loadings for Attitudes About the Work Environment Scale

| | | Factor Loadings[a] |
|---|---|---|
| FACTOR 1: | Satisfaction with Job and Organization | |
| | Question WE-1[b] | .80 |
| | Question WE-2 | .61 |
| | Question WE-3 | .62 |
| FACTOR 2: | Motivators Present in Work | |
| | Question WE-4 | .65 |
| | Question WE-5 | .58 |
| | Question WE-6 | .74 |
| | Question WE-7 | .54 |
| FACTOR 3: | Personal Expertise in Decision-Making | |
| | Question WE-8 | Communality = .09 |
| FACTOR 4: | Task-Relevant Control Possessed | |
| | Question WE-9 | Communality = .05 |

[a]These numbers represent the coefficients from the factor pattern matrix after the final factor analysis of the separate scales.

[b]The actual questions asked can be found in Appendix I, Table I-B.

Table II-C

Factor Loadings for Attitudes About the Supervisor Scale

| | | Factor Loadings[a] |
|---|---|---|
| FACTOR 1: | Skill of Supervisor | |
| | Question S-1[b] | .68 |
| | Question S-2 | .74 |
| | Question S-3 | .59 |
| FACTOR 2: | Influence and Effectiveness of Supervisor | |
| | Question S-4 | .52 |
| | Question S-5 | .71 |
| | Question S-6 | .66 |
| | Question S-7 | .77 |

[a]These numbers represent the coefficients from the factor pattern matrix after the final factor analysis of the separate scales.

[b]The actual questions asked can be found in Appendix I, Table I-C.

Table II-D

Factor Loadings for Attitudes About Location in the Decision-Making Network Scale

| | Factor Loadings[a] |
|---|---|
| FACTOR 1: Importance Attached to Supervisor's Influence | |
| Question L-1[b] | .74 |
| Question L-2 | .75 |
| FACTOR 2: Verticality of Communications | |
| Questions L-3 | .48 |
| Questions L-4 | .43 |
| Questions L-5 | .54 |
| FACTOR 3: Commitment and Length of Service | |
| Question L-6 | .41 |
| Question L-7 | .52 |
| Question L-8 | .42 |

[a]These numbers represent the coefficients from the factor pattern matrix after the final factor analysis of the separate scales.

[b]The actual questions asked can be found in Appendix I, Table I-D.

Table II-E

Factor Loadings for Clarity of Role Requirements Scale

| | | Factor Loadings[a] |
|---|---|---|
| FACTOR 1: | Clarity and Consistency of Expectations/Policies | |
| | Question R-1[b] | .49 |
| | Question R-2 | .65 |
| | Question R-3 | .57 |
| FACTOR 2: | Presence of Well-Defined Job and Performance Objectives | |
| | Question R-4 | .48 |
| | Question R-5 | .48 |
| FACTOR 3: | Role Discretion/Flexibility | |
| | Question R-6 | Communality = .01 |

[a]These numbers represent the coefficients from the factor pattern matrix after the final factor analysis of the separate scales.

[b]The actual questions asked can be found in Appendix I, Table I-E.

# A P P E N D I X  I I I

Table III-A

Differences in Mean Perceptions of Organizational Control For Various Levels in the Hierarchy for Combined Samples (N = 472)

PERCEPTION OF UNDERWRITERS' ORGANIZATIONAL CONTROL

| | M | SD |
|---|---|---|
| Underwriters | 2.08 | 1.25 |
| Supervising Underwriters | 2.08 | 1.02 |
| Underwriting Managers | 2.23 | 1.15 |

PERCEPTION OF SUPERVISING UNDERWRITERS' ORGANIZATIONAL CONTROL

| | M | SD |
|---|---|---|
| Underwriters | 2.72 | 1.05 |
| Supervising Underwriters | 2.58 | 1.00 |
| Underwriting Manager | 2.58 | 1.14 |

PERCEPTION OF UNDERWRITING MANAGERS' ORGANIZATIONAL CONTROL

| | M | SD |
|---|---|---|
| Underwriters | 3.68 | .75 |
| Supervising Underwriters | 3.64 | .97 |
| Underwriting Managers | 3.53 | .83 |

NOTE: There are no significant differences in the amount of organizational control at various levels in the hierarchy as perceived by other levels using paired t-tests of mean differences, two-tailed test of significance.

Table III-B

Comparisons of the Reliability Coefficients of the Independent Variables Using Weighted and Unweighted Scales, Sample A

| | STANDARDIZED ITEM COEFFICIENT ALPHA | |
|---|---|---|
| Dimension | Weighted Scale[a] | Unweighted Scale |
| Personal Control | .69 | .53 |
| Work Environment | .80 | .80 |
| Supervisor | .57 | .86 |
| Location | .52 | .52 |
| Role Clarity | .49 | .51 |

[a]Factor score coefficients were used as the weights for the items comprising the various scales of the independent variables.

Table III-C

Comparisons of the Correlations Between Organizational Control and the Independent Variables Using Weighted and Unweighted Scales, Sample A

| Dimension | Weighted Scale[a] | Unweighted Scale |
|---|---|---|
| Personal Control | -.06 | -.17** |
| Work Environment | .41*** | .40*** |
| Supervisor | .25*** | .25*** |
| Location | .28*** | .29*** |
| Role Clarity | .22*** | .26*** |
| Level | .37*** | .37*** |

---

[a]Factor score coefficients were used as the weights for the items comprising the various scales of the independent variables (with the exception of level).

**$p<.01$

***$p<.001$

Table III-D

Comparisons of the Multiple Regression Analysis of Organizational Control Using Weighted and Unweighted Scales, Sample A

| | Weighted Scale[a] | Unweighted Scale |
|---|---|---|
| F-value | 17.67*** | 16.90*** |
| $R^2$ | .32 | .31 |
| Using Step-Wise Inclusion Procedure: | | |
| Dimension | $R^2$ | $R^2$ |
| Work Environment | .17*** | .16*** |
| Level | .08*** | .08*** |
| Personal Control | .03*** | .04*** |
| Supervisor | .03** | .03** |
| Role Clarity | .00 | .00 |
| Location | .01 | .00 |

[a]Factor score coefficients were used as the weights for the items comprising the various scales of the independent variables (with the exception of level).

**$p<.01$

***$p<.001$

# A P P E N D I X  I V

TABLE IV-A

Partial Correlations Between Organizational Control and the Proposed Dimensions of Organization Control, Sample A

| PARTIAL CORRELATIONS, CONTROLLING FOR: | DIMENSIONS | | | | | |
|---|---|---|---|---|---|---|
| | Work Environment ($r$=.40)[a] | Level ($r$=.37)[a] | Personal Control ($r$=-.17)[a] | Supervisor ($r$=.25)[a] | Role Clarity ($r$=.26)[a] | Location ($r$=.29)[a] |
| Work Environment | -- | .31*** | -.19** | .15* | .12* | .16** |
| Level | .35*** | -- | -.22*** | .27*** | .25*** | .16** |
| Personal Control | .41*** | .39*** | -- | .26*** | .25*** | .31*** |
| Supervisor | .35*** | .38*** | -.19** | -- | .21*** | .25*** |
| Role Clarity | .33*** | .36*** | -.09 | .20*** | -- | .24*** |
| Location | .32*** | .28*** | -.20*** | .21*** | .21*** | -- |
| Work Environment & Level | -- | -- | -.23*** | .18** | .13* | .05 |
| Work Environment, Level, Personal Control & Supervisor | | | | -- | .09 | .05 |
| All other Dimensions[b] | .23*** | .32*** | -.24*** | .17** | .08 | .04 |

[a]Indicates zero-order correlation between dimension and organizational control.

[b]Fifth-order partial correlation between each dimension and organizational control (all other dimensions held constant).

*$p$<.05
**$p$<.01
***$p$<.001

TABLE IV-B

Comparisons of Scale Measures Between Individuals from High and Low Performing Branch Offices, Sample A

| SCALE MEASURES | M | SD | t | p[a] |
|---|---|---|---|---|
| Work Environment | | | .47 | n.s. |
| High Performing Offices | 31.93 | 6.65 | | |
| Low Performing Offices | 31.57 | 6.00 | | |
| Personal Control | | | .85 | n.s. |
| High Performing Offices | 29.68 | 5.66 | | |
| Low Performing Offices | 28.95 | 7.33 | | |
| Supervisor | | | 1.23 | n.s. |
| High Performing Offices | 23.87 | 5.09 | | |
| Low Performing Offices | 24.02 | 5.48 | | |
| Role Clarity | | | 2.42 | .015 |
| High Performing Offices | 20.82 | 2.82 | | |
| Low Performing Offices | 19.80 | 3.51 | | |
| Location | | | .14 | n.s. |
| High Performing Offices | 27.82 | 4.60 | | |
| Low Performing Offices | 27.73 | 5.26 | | |

NOTE: High Performing Offices ($N$ = 111);
Low Performing Offices ($N$ = 125).

[a] $t$-test, two-tailed.

TABLE IV-C

Step-wise Multiple Regression Analysis

of Organizational Effectiveness,

Sample A

| Dimensions in Order of Relative Contribution to Explained Variance | F-value to enter equation | Change in Multiple R | Change in $R^2$ |
|---|---|---|---|
| (1) Role Clarity | 5.63* | .16 | .02 |
| (2) Personal Control | 1.36 | .02 | .00 |
| (3) Supervisor | .63 | .01 | .00 |
| (4) Location | .22 | .00 | .00 |
| (5) Work Environment | .10 | .00 | .00 |
| (6) Level | .07 | .00 | .00 |
| Total Multiple R = .18 | | Total $R^2$ = .03 | |

*$p < .05$

| ANOVA | df | SS | MS | F |
|---|---|---|---|---|
| Regression | 6 | 1.96 | .327 | 1.32 |
| Residual | 224 | 55.48 | .248 | |

TABLE IV-D

Comparisons of Organizational Control Between Individuals from High and Low Performing Branch Offices, Sample A

| "How Influential Are You?" | N | M | SD | t | p[a] |
|---|---|---|---|---|---|
| Underwriters | | | | .70 | n.s. |
| High Performing Offices | 67 | 2.21 | 1.11 | | |
| Low Performing Offices | 77 | 2.08 | 1.12 | | |
| Supervising Underwriters | | | | -.62 | n.s. |
| High Performing Offices | 24 | 2.42 | 1.02 | | |
| Low Performing Offices | 27 | 2.59 | 1.01 | | |
| Underwriting Managers | | | | 1.03 | n.s. |
| High Performing Offices | 16 | 3.56 | .89 | | |
| Low Performing Offices | 20 | 3.20 | 1.15 | | |
| All Levels | | | | .57 | n.s. |
| High Performing Offices | 107 | 2.46 | 1.15 | | |
| Low Performing Offices | 124 | 2.37 | 1.17 | | |

[a]*t*-test, one-tailed.

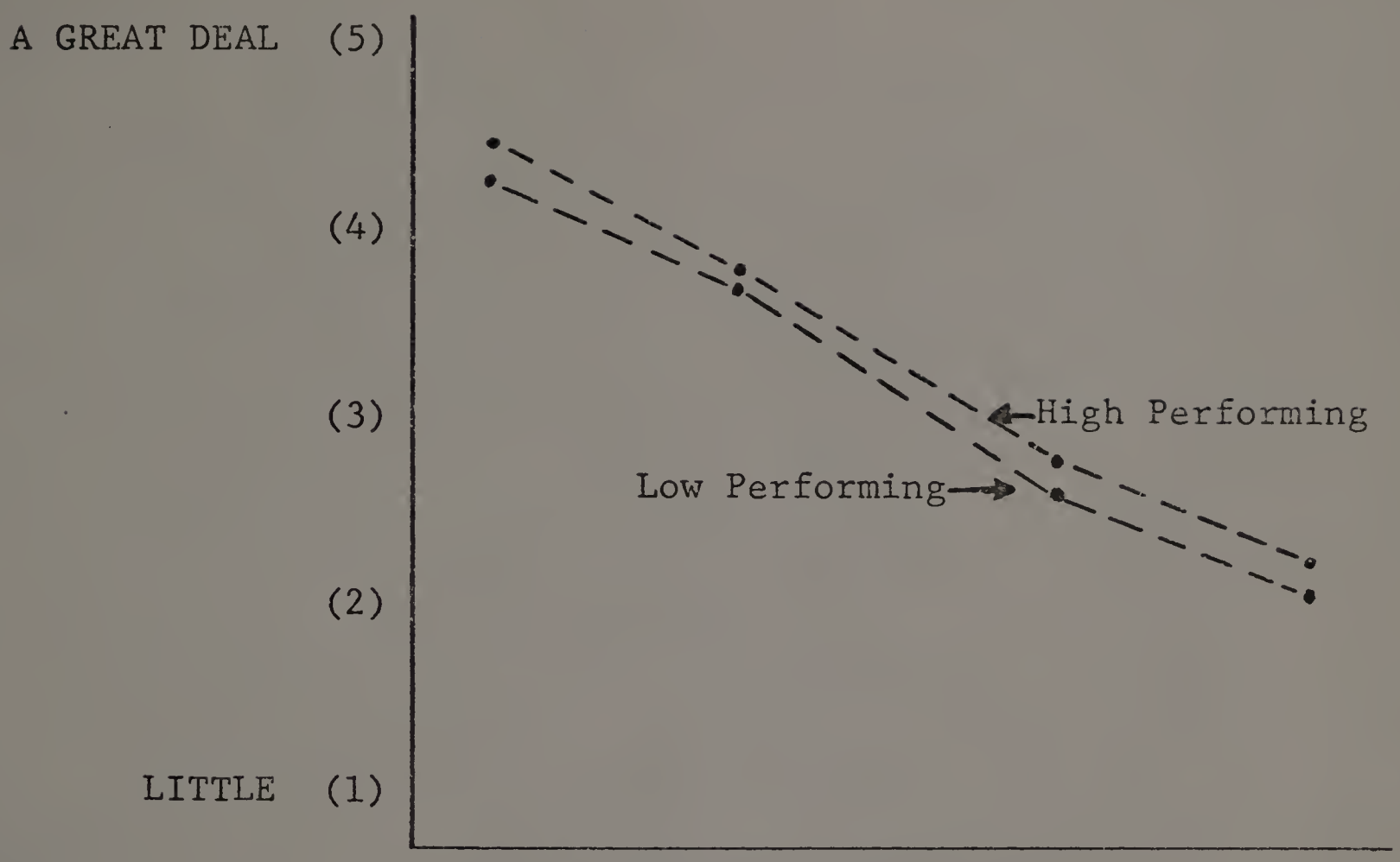


FIGURE IV-A

Control Graph for High and Low Performing Branch Offices Depicting the Relationship Between Level in the Organization and Amount of Control, Sample A

TABLE IV-E

Comparisons of Organizational Control for Different Levels in the Organization from High and Low Performing Branch Offices, Sample A

| "How Influential Are The Following Groups?" | M | SD | t | p[a] |
|---|---|---|---|---|
| Branch Office Managers | | | 1.30 | n.s. |
| High Performing Offices | 4.41 | .82 | | |
| Low Performing Offices | 4.25 | 1.05 | | |
| Underwriting Managers | | | .16 | n.s. |
| High Performing Offices | 3.62 | .77 | | |
| Low Performing Offices | 3.60 | .99 | | |
| Supervising Underwriters | | | 1.12 | n.s. |
| High Performing Offices | 2.77 | 1.09 | | |
| Low Performing Offices | 2.62 | .99 | | |
| Underwriters | | | 1.56 | n.s. |
| High Performing Offices | 2.26 | 1.09 | | |
| Low Performing Offices | 2.04 | 1.03 | | |

NOTE: High Performing Offices ($N$ = 110);
Low Performing Offices ($\overline{N}$ = 124).

[a]$t$-test, one-tailed.

TABLE IV-F

Compairsons of Organizational Control for Different Levels in the Organization from High and Low Performing Branch Offices as Seen by UNDERWRITERS only, Sample A

| "How Influential Are The Following Groups?" | M | SD | t | p[a] |
|---|---|---|---|---|
| Branch Office Managers | | | 1.07 | n.s. |
| High Performing Offices | 4.36 | .77 | | |
| Low Performing Offices | 4.19 | 1.11 | | |
| Underwriting Managers | | | .50 | n.s. |
| High Performing Offices | 3.74 | .68 | | |
| Low Performing Offices | 3.68 | .85 | | |
| Supervising Underwriters | | | 1.61 | .054 |
| High Performing Offices | 2.97 | 1.05 | | |
| Low Performing Offices | 2.70 | .98 | | |
| Underwriters | | | 1.32 | n.s. |
| High Performing Offices | 2.29 | 1.10 | | |
| Low Performing Offices | 2.05 | 1.07 | | |

NOTE: High Performing Offices ($N$ = 69);
Low Performing Offices ($N$ = 77).

[a] $t$-test, one-tailed.

TABLE IV-G

Comparisons of Organizational Control for Different Levels in the Organization from High and Low Performing Branch Offices as Seen by SUPERVISING UNDERWRITERS only, Sample A

| "How Influential Are The Following Groups?" | M | SD | t | p[a] |
|---|---|---|---|---|
| Branch Office Managers | | | .90 | n.s. |
| High Performing Offices | 4.44 | .92 | | |
| Low Performing Offices | 4.19 | 1.11 | | |
| Underwriting Managers | | | -.69 | n.s. |
| High Performing Offices | 3.42 | .93 | | |
| Low Performing Offices | 3.63 | 1.24 | | |
| Supervising Underwriters | | | -.53 | n.s. |
| High Performing Offices | 2.44 | 1.08 | | |
| Low Performing Offices | 2.59 | 1.01 | | |
| Underwriters | | | .72 | n.s. |
| High Performing Offices | 2.21 | 1.14 | | |
| Low Performing Offices | 2.00 | .92 | | |

NOTE: High Performing Offices ($N$ = 25);
Low Performing Offices ($\bar{N}$ = 27).

[a] $t$-test, one-tailed.

TABLE IV-H

Comparisons of Organizational Control for Different Levels in the Organization from High and Low Performing Branch Offices as Seen by UNDERWRITING MANAGERS only, Sample A

| "How Influential Are The Following Groups?" | M | SD | t | p[a] |
|---|---|---|---|---|
| Branch Office Managers | | | .05 | n.s. |
| High Performing Offices | 4.56 | .89 | | |
| Low Performing Offices | 4.55 | .69 | | |
| Underwriting Managers | | | .41 | n.s. |
| High Performing Offices | 3.44 | .81 | | |
| Low Performing Offices | 3.30 | 1.13 | | |
| Supervising Underwriters | | | .25 | n.s. |
| High Performing Offices | 2.44 | 1.09 | | |
| Low Performing Offices | 2.35 | .99 | | |
| Underwriters | | | .39 | n.s. |
| High Performing Offices | 2.19 | 1.05 | | |
| Low Performing Offices | 2.05 | 1.05 | | |

NOTE: High Performing Offices ($N$ = 16);
Low Performing Offices ($\overline{N}$ = 20).

[a] $t$-test, one-tailed.

TABLE IV-I

Comparison of Total Amount of Organizational Control for Individuals from High and Low Performing Branch Offices, Sample A

| | N | M | SD | t | p[a] |
|---|---|---|---|---|---|
| TOTAL AMOUNT OF CONTROL | | | | 1.17 | n.s. |
| High Performing Branch Offices | 111 | 12.86 | 2.99 | | |
| Low Performing Branch Offices | 125 | 12.42 | 2.82 | | |

[a] t-test, one-tailed.

TABLE IV-J

Intercorrelations Between Dimensions of Organizational Control, Sample B (N = 233)

| DIMENSIONS | Work Environment | Location | Personal Control | Supervisor | Role Clarity |
|---|---|---|---|---|---|
| Level | .37 | .56*** | -.20*** | .12* | .25*** |
| Work Environment | -- | .48*** | -.26*** | .34*** | .51*** |
| Location | | -- | -.24*** | .09 | .40*** |
| Personal Control | | -- | | -.24*** | -.16** |
| Supervisor | | | -- | | .34*** |
| Role Clarity | | | | -- | |

*p<.05

**p<.01

***p<.001

TABLE IV-K

Intercorrelations Between Scale Factors

and Organizational Control, Sample B

| DIMENSIONS | ORGANIZATIONAL CONTROL |
|---|---|
| Work Environment | |
| Factor 1 | .24*** |
| Factor 2 | .30*** |
| Factor 3 | .05 |
| Factor 4 | .33*** |
| Location | |
| Factor 1 | .40*** |
| Factor 2 | .30*** |
| Personal Control | |
| Factor 1 | -.15** |
| Factor 2 | -.13** |
| Supervisor | |
| Factor 1 | .20*** |
| Factor 2 | -.01 |
| Role Clarity | |
| Factor 1 | .20*** |
| Factor 2 | .19*** |

**p<.01

***p<.001

TABLE IV-L

Multiple Regression Analysis of Organizational Control Model, Sample B

INCLUDING HIERARCHICAL LEVEL

| ANOVA | df | SS | MS | F |
|---|---|---|---|---|
| Regression | 6 | 94.84 | 15.81 | 14.98*** |
| Residual | 226 | 238.59 | 1.06 | |

Multiple $R$ = .53

$R^2$ = .28

EXCLUDING HIERARCHICAL LEVEL

| ANOVA | df | SS | MS | F |
|---|---|---|---|---|
| Regression | 5 | 76.53 | 15.31 | 13.33*** |
| Residual | 227 | 260.55 | 1.15 | |

Multiple $R$ = .48

$R^2$ = .23

***$p$<.001

TABLE IV-M

Multiple Regression Analysis of Organizational Control Model by One's Level in the Organizational Hierarchy, Sample B

UNDERWRITERS

| ANOVA | df | SS | MS | F |
|---|---|---|---|---|
| Regression | 5 | 5.00 | 1.00 | .78 |
| Residual | 138 | 177.83 | 1.29 | |

$p$ = n.s.
Multiple $R$ = .16
$R^2$ = .03

SUPERVISING UNDERWRITERS

| ANOVA | df | SS | MS | F |
|---|---|---|---|---|
| Regression | 5 | 12.09 | 2.42 | 2.93* |
| Residual | 47 | 38.78 | .82 | |

*$p$<.05
Multiple $R$ = .49
$R^2$ = .24

UNDERWRITING MANAGERS

| ANOVA | df | SS | MS | F |
|---|---|---|---|---|
| Regression | 5 | 6.12 | 1.22 | 2.51* |
| Residual | 30 | 14.63 | .49 | |

*$p$<.05
Multiple $R$ = .54
$R^2$ = .30

TABLE IV-N

Matrix of F Ratios Between Each Pair of Groups in the Four-Group Discriminant Analysis, Sample B

| | Group #1 | Group #2 | Group #3 | Group #4 |
|---|---|---|---|---|
| Group #1 | -- | | | |
| Group #2 | .86 | -- | | |
| Group #3 | 8.15*** | 4.75*** | -- | |
| Group #4 | 15.46*** | 11.55*** | 2.48* | -- |

*p<.05

***p<.001

TABLE IV-O

Step-Wise Discriminant Analysis of Organizational Control and Standardized Discriminant Coefficients, Sample B

| Dimensions in Order of Discriminating Power | STANDARDIZED DISCRIMINANT COEFFICIENTS[a] | |
|---|---|---|
| | Four-Group Clustering | Two-Group Clustering |
| (1) Level | -.76 | .78 |
| (2) Location | -.39 | .39 |
| (3) Work Environment | -.30 | .28 |
| (4) Role Clarity | .04 | -.11 |
| (5) Personal Control | .11 | -.10 |
| (6) Supervisor | -.07 | .07 |

[a]These coefficients are sets of weights used to maximize the discriminant function. When the sign is ignored, they represent the relative contribution of that dimension to the discriminant function.

TABLE IV-P

Comparisons Between Results of Discriminant Analysis When Different Dimensions of the Organizational Control Model are Included in the Discriminant Function, Sample B

| | STANDARDIZED DISCRIMINANT COEFFICIENTS[a] | |
|---|---|---|
| DIMENSIONS INCLUDED: | Four-Group Clustering | Two-Group Clustering |
| Level | -.77 | -.80 |
| Location | -.38 | -.37 |
| Work Environment | -.33 | -.27 |
| EIGENVALUE: | .52 | .45 |
| CANONICAL CORRELATION: | .59 | .56 |
| WILKS' LAMBDA: | .64 | .69 |
| CHI-SQUARE: | 101.96*** | 89.18*** |
| PERCENTAGE OF CORRECT CLASSIFICATIONS: | 42.5*** | 78.1*** |

TABLE IV-P (continued)

| DIMENSIONS INCLUDED: | STANDARDIZED DISCRIMINANT COEFFICIENTS | |
|---|---|---|
| | Four-Group Clustering | Two-Group Clustering |
| Personal Control | .57 | .66 |
| Role Clarity | -.78 | -.63 |
| Location | -.04 | -.13 |
| EIGENVALUE: | .12 | .08 |
| CANONICAL CORRELATION: | .33 | .27 |
| WILKS' LAMBDA: | .88 | .93 |
| CHI-SQUARE: | 29.69*** | 14.18*** |
| PERCENTAGE OF CORRECT CLASSIFICATIONS: | 34.3*** | 61.4*** |

***$p < .001$

TABLE IV-Q

Intercorrelations Between Dimensions of Organizational Control, Combined Samples (N = 464)

| DIMENSIONS | Work Environment | Location | Personal Control | Supervisor | Role Clarity |
|---|---|---|---|---|---|
| Level | .30*** | .52*** | .16*** | -.05 | .07 |
| Work Environment | -- | .40*** | .46*** | -.14** | .33*** |
| Location | | -- | .33*** | -.15*** | .07 |
| Role Clarity | | -- | -.15*** | .31*** | |
| Personal Control | | | -- | -.15*** | |
| Supervisor | | | | -- | |

**p<.01

***p<.001

TABLE IV-R

Comparison of Total Amount of Organizational Control for Individuals from High and Low Performing Branch Offices, Combined Samples

| TOTAL AMOUNT OF CONTROL | N | M | SD | t | p[a] |
|---|---|---|---|---|---|
| High Performing Branch Offices | 231 | 12.81 | 2.97 | 1.43 | n.s. |
| Low Performing Branch Offices | 262 | 12.42 | 3.06 | | |

NOTE: Includes branch manager level.

[a]*t*-test, one-tailed.

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